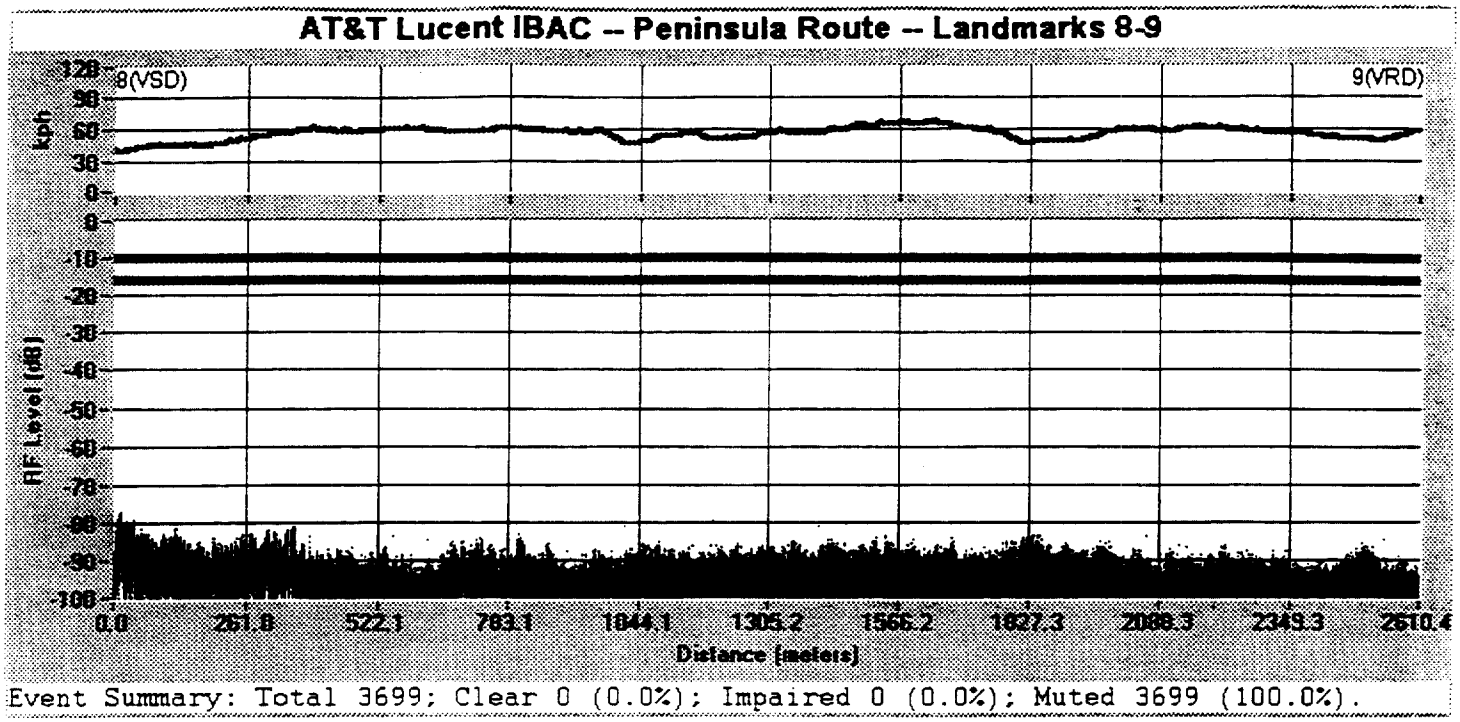
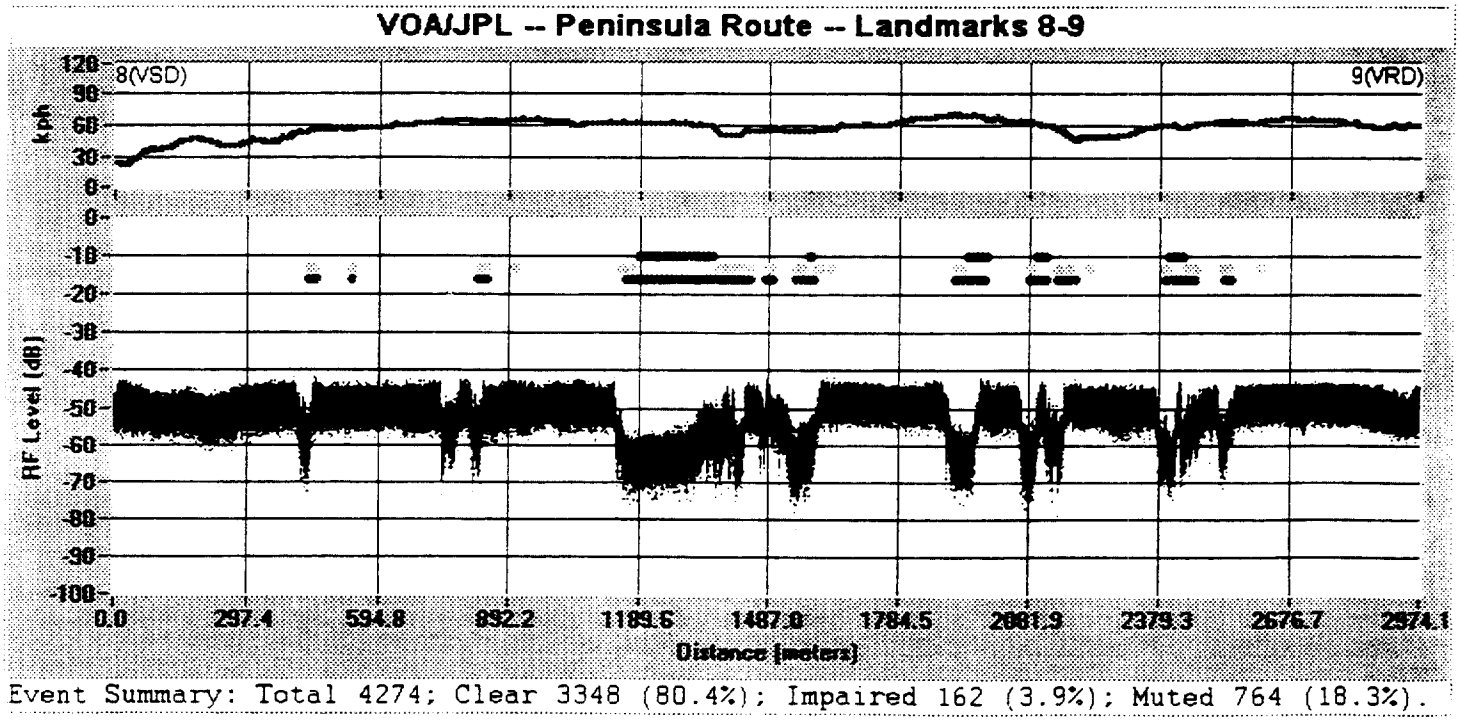
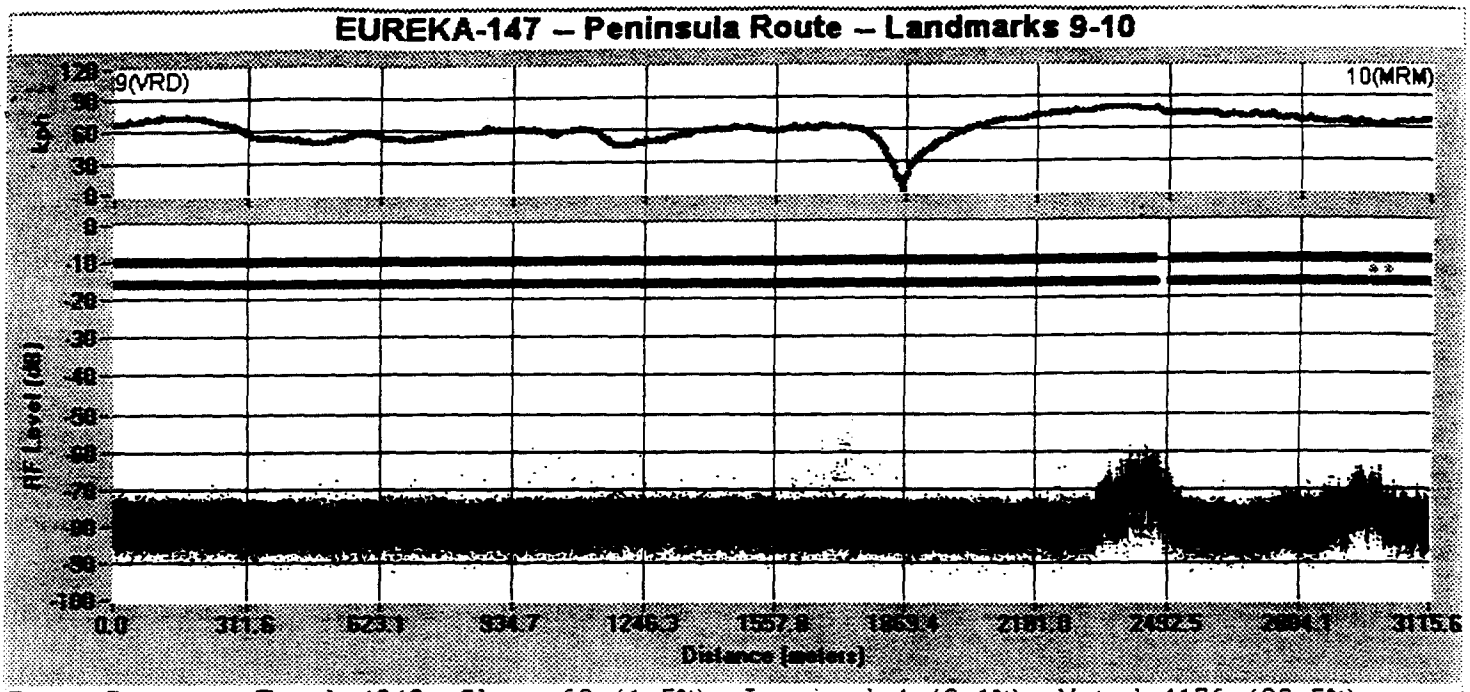
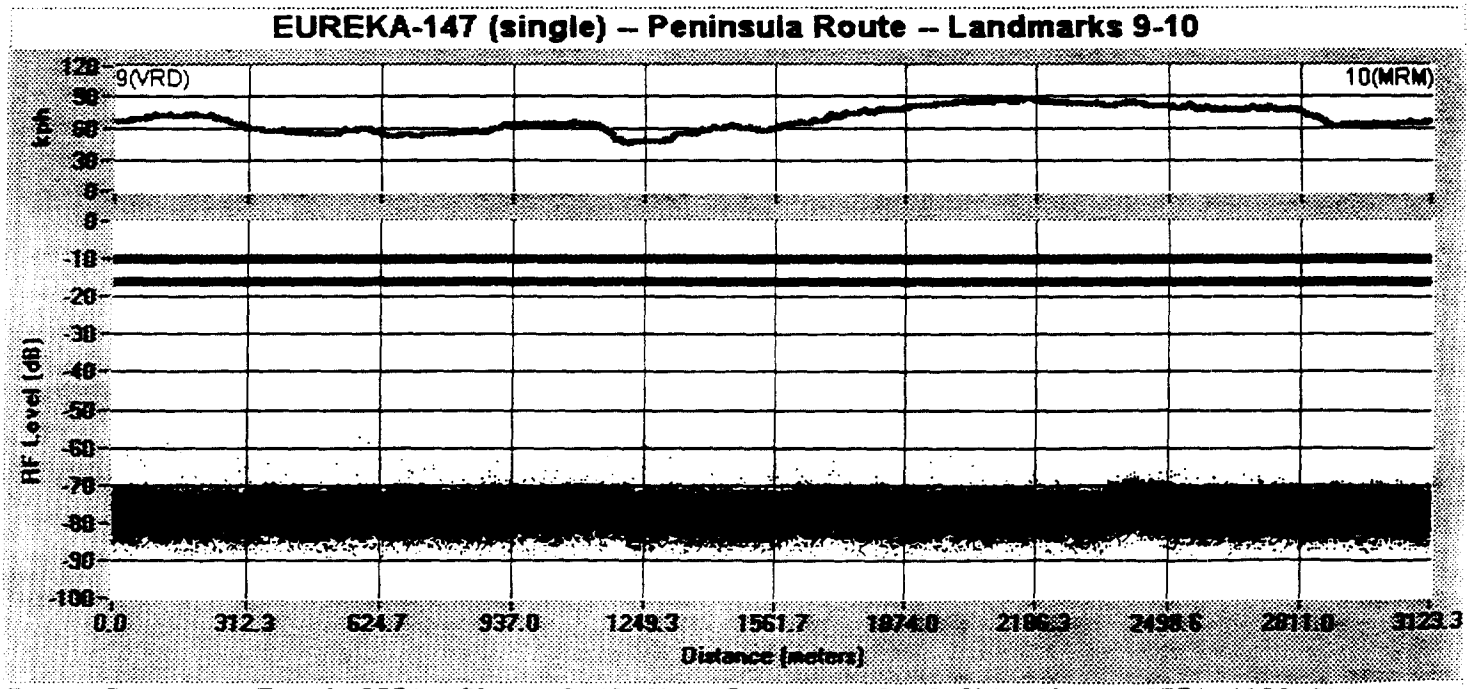

AT&T Lucent IBAC -- Peninsula Route -- Landmarks 8-9
8(VSD)
9(VRD)
kph
RF Level (dB)
Distance (meters)
Event Summary: Total 3699; Clear 0 (0.0%); Impaired 0 (0.0%); Muted 3699 (100.0%).

NOTE #1

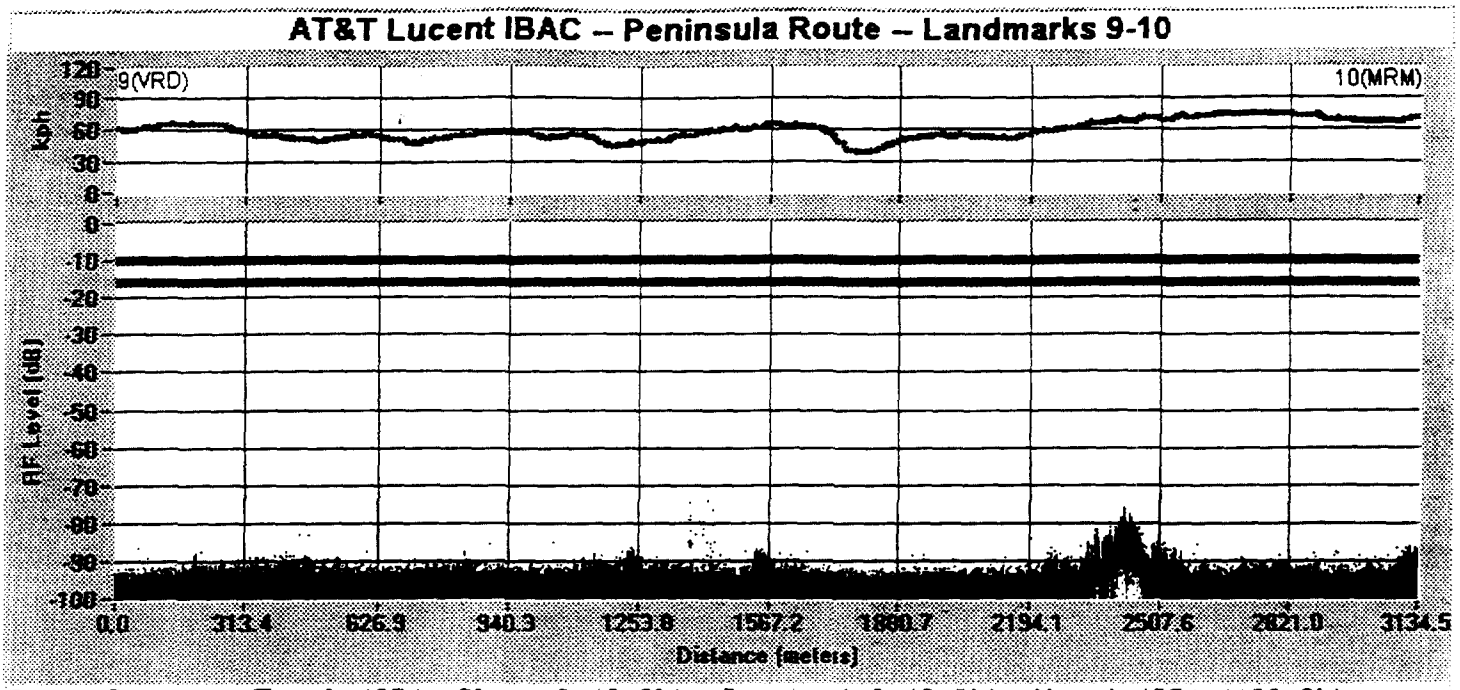

VOA/JPL -- Peninsula Route -- Landmarks 8-9
8(VSD)
9(VRD)
kph
RF Level (dB)
Distance (meters)
Event Summary: Total 4274; Clear 3348 (80.4%); Impaired 162 (3.9%); Muted 764 (18.3%).



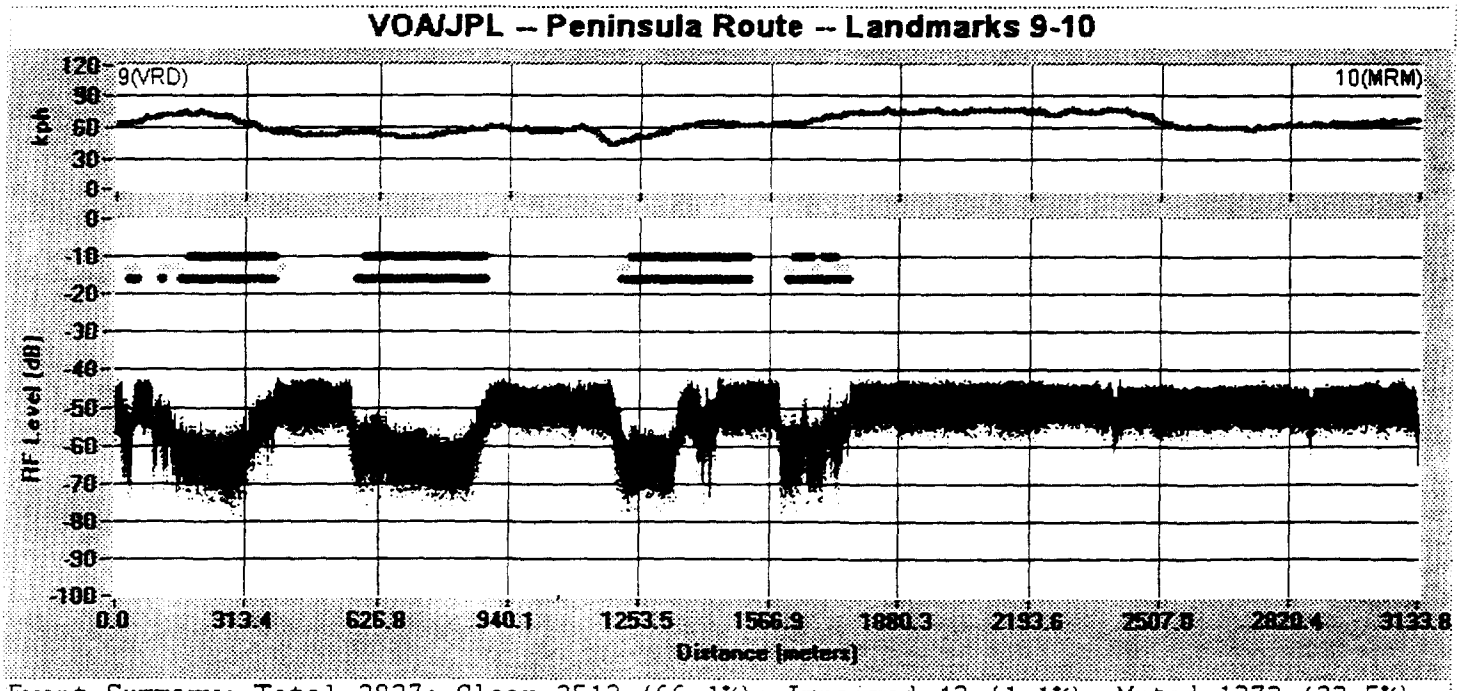
Event Summary: Total 4243; Clear 63 (1.5%); Impaired 4 (0.1%); Muted 4176 (98.5%).



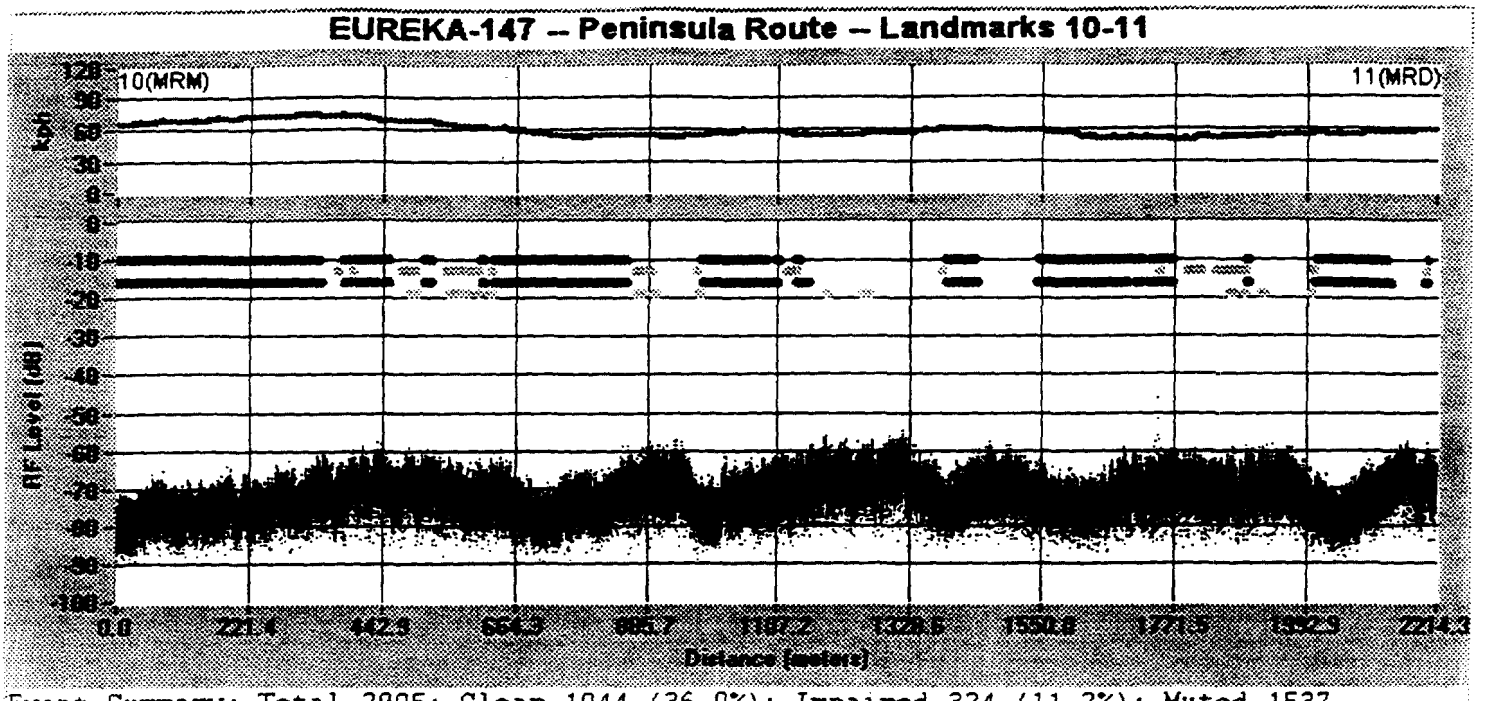
Event Summary: Total 3551; Clear 0 (0.0%); Impaired 0 (0.0%); Muted 3551 (100.0%).



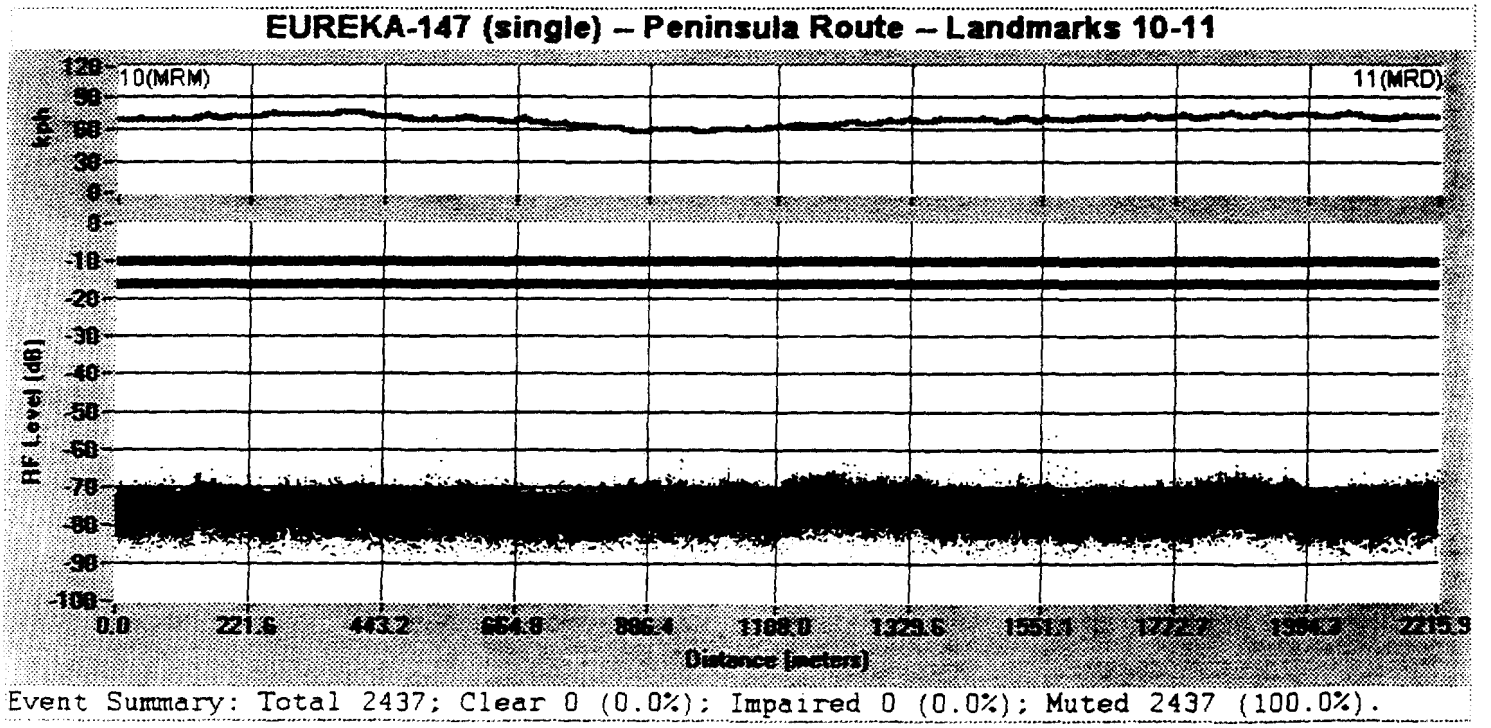
Event Summary: Total 4254; Clear 0 (0.0%); Impaired 0 (0.0%); Muted 4254 (100.0%).



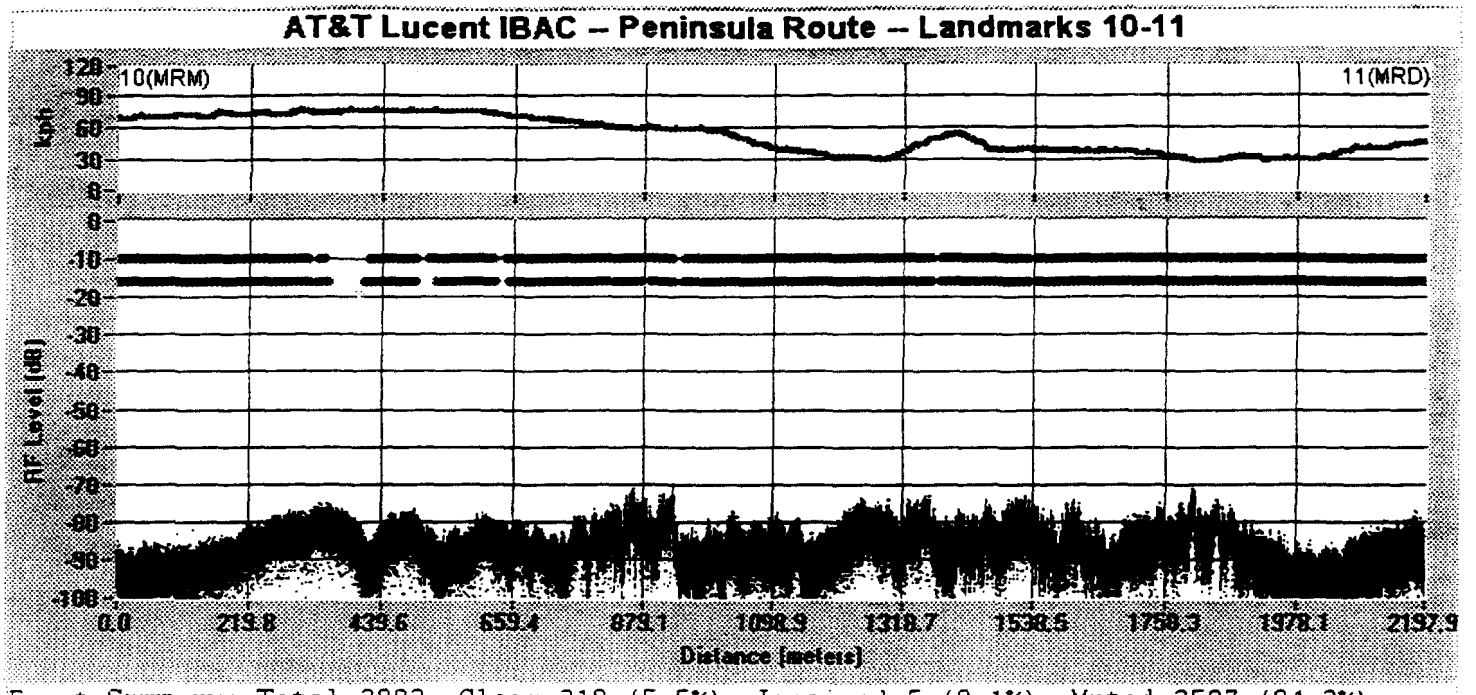
Event Summary: Total 3827; Clear 2513 (66.1%); Impaired 42 (1.1%); Muted 1272 (33.5%).



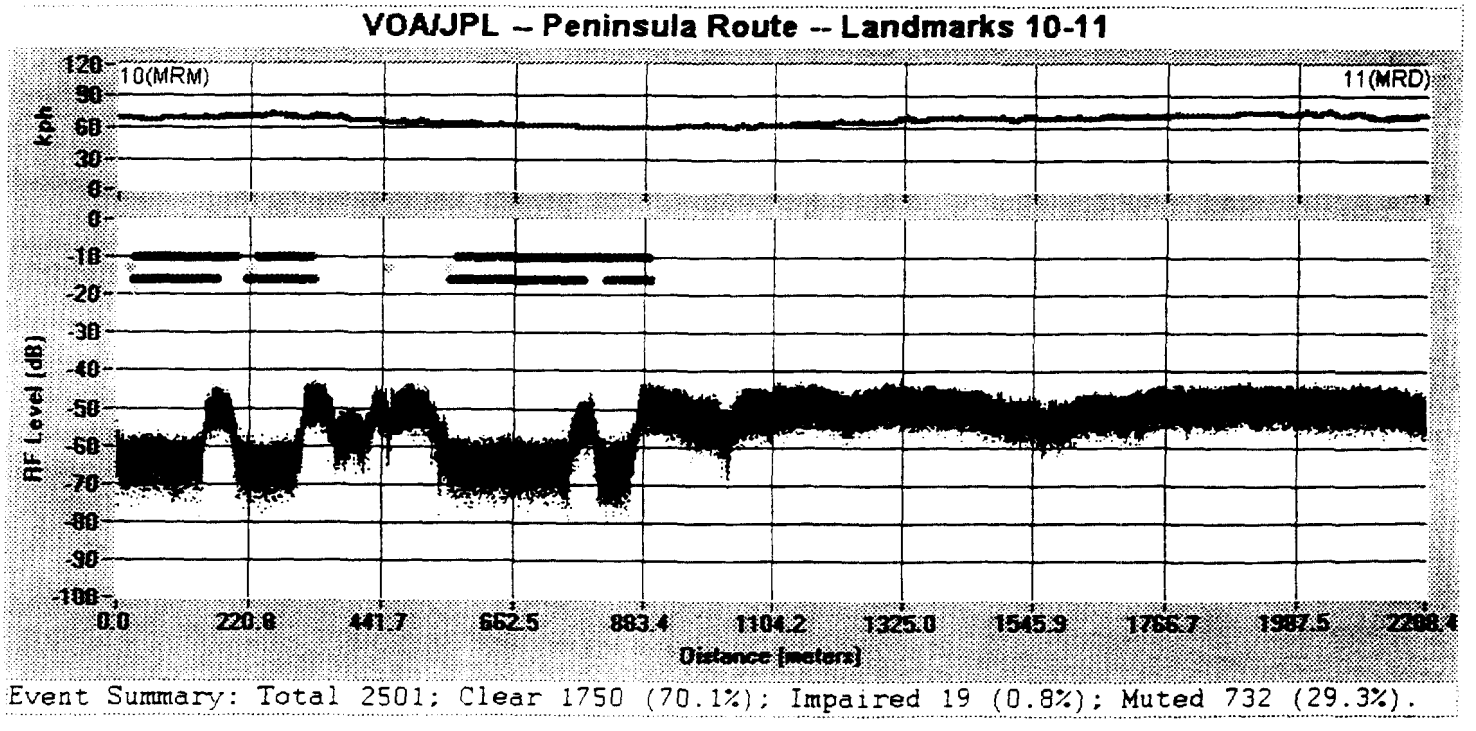
Event Summary: Total 2905; Clear 1044 (36.0%); Impaired 324 (11.2%); Muted 1537



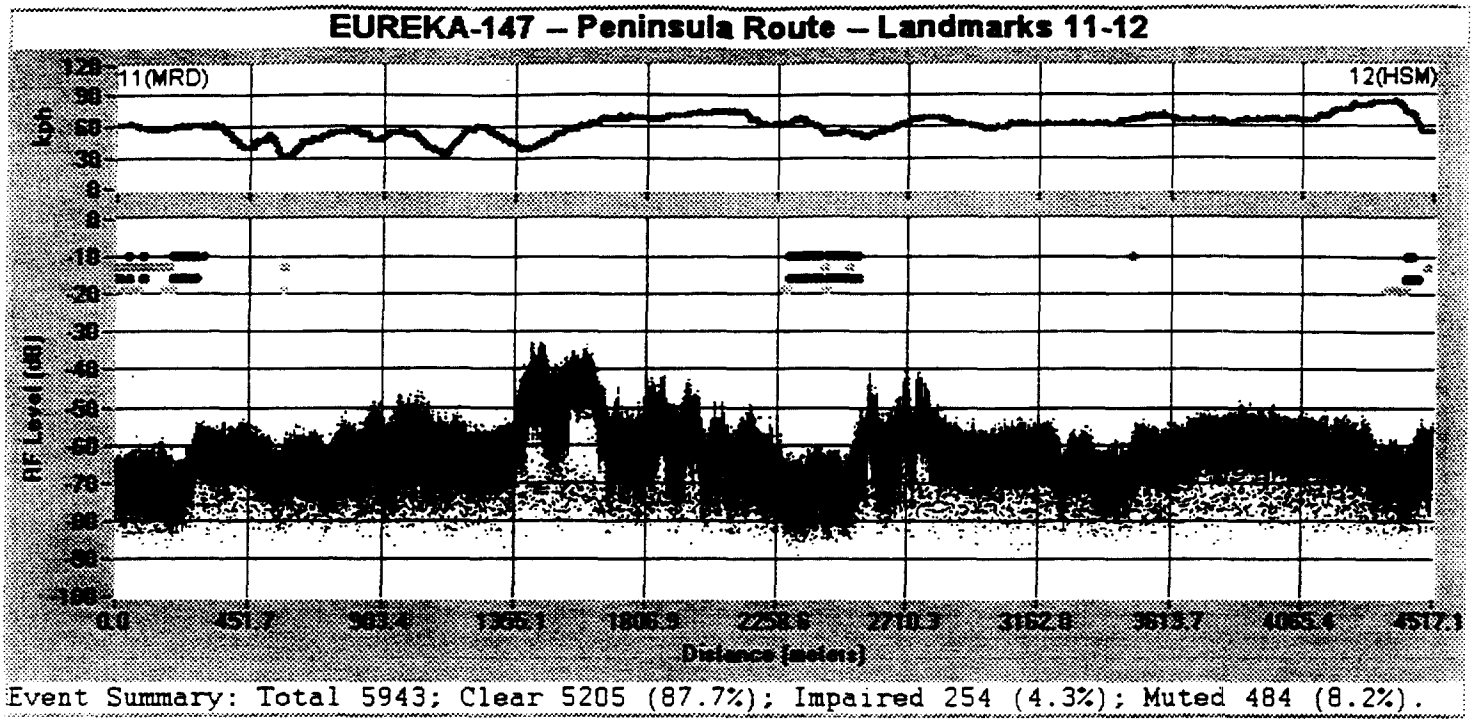
Event Summary: Total 2437; Clear 0 (0.0%); Impaired 0 (0.0%); Muted 2437 (100.0%).



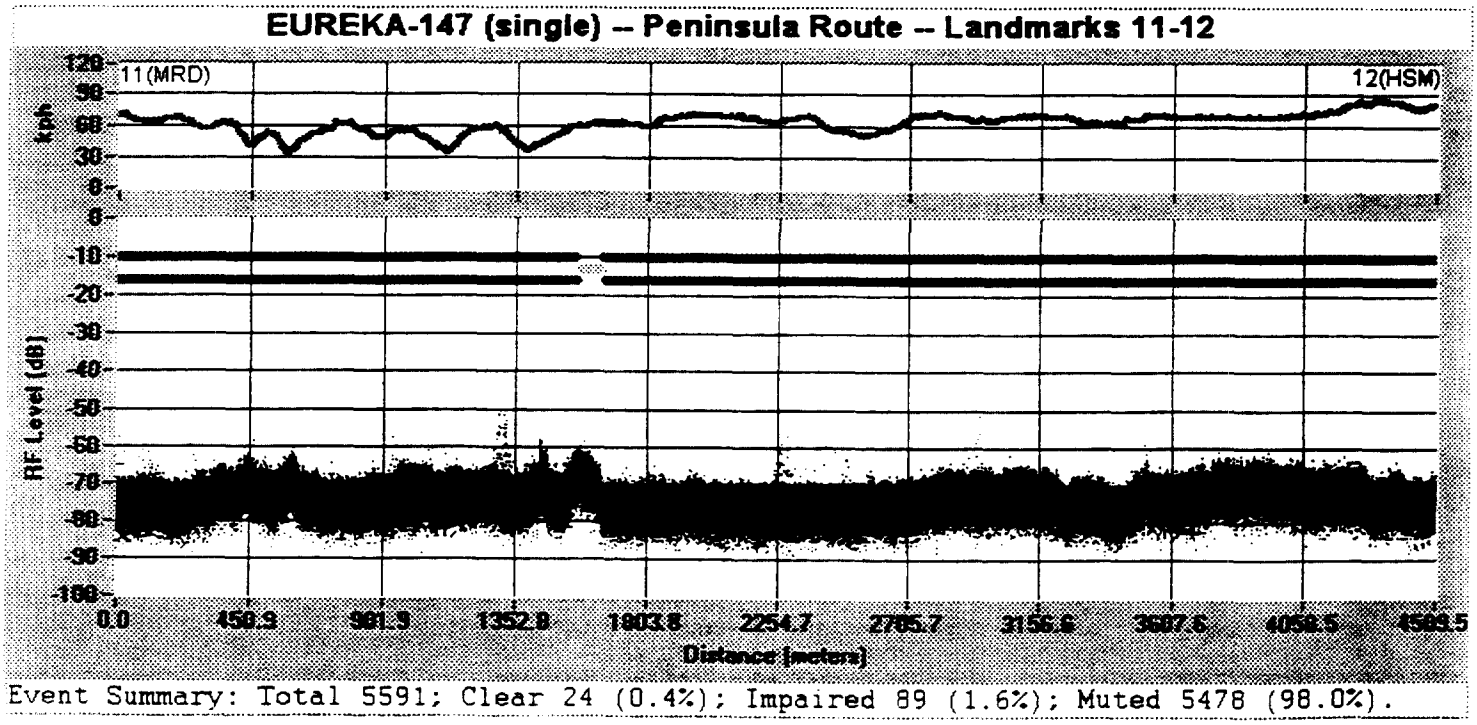
Event Summary: Total 3802; Clear 210 (5.5%); Impaired 5 (0.1%); Muted 3587 (94.3%).



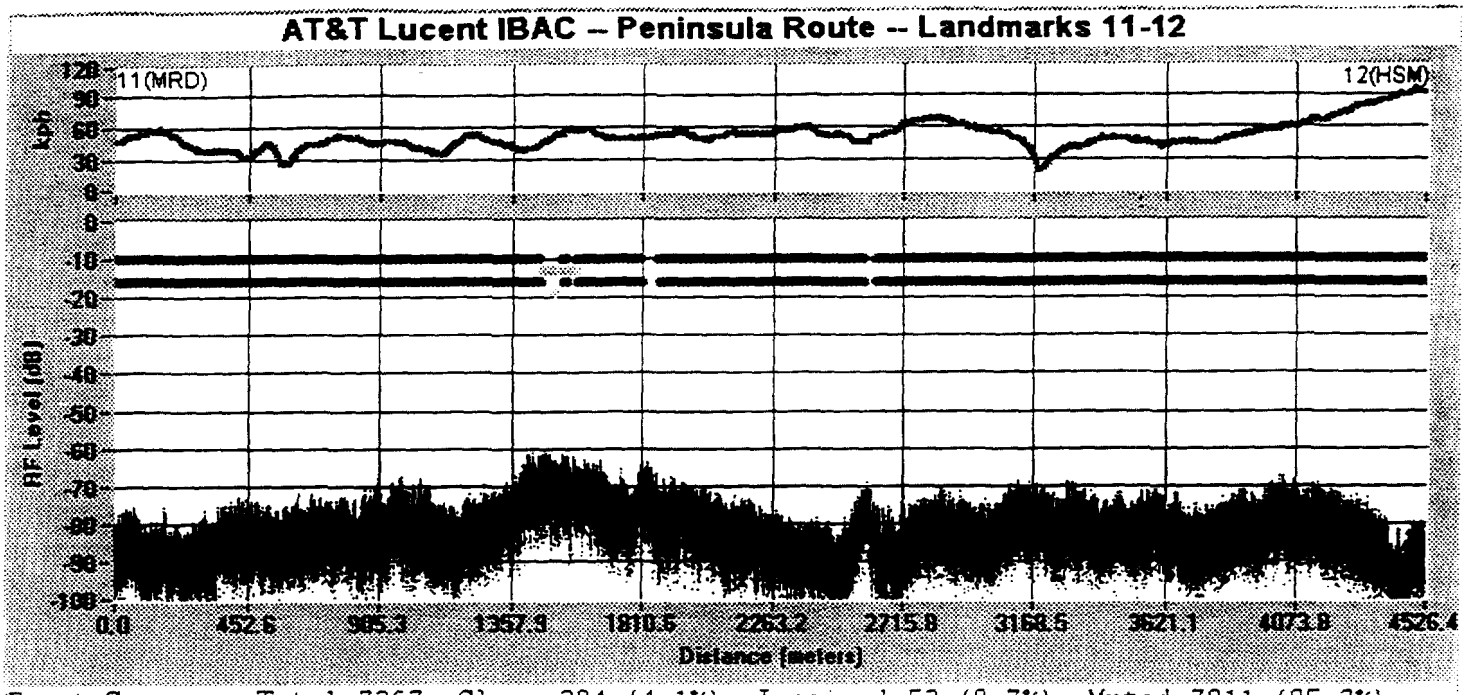
Event Summary: Total 2501; Clear 1750 (70.1%); Impaired 19 (0.8%); Muted 732 (29.3%).



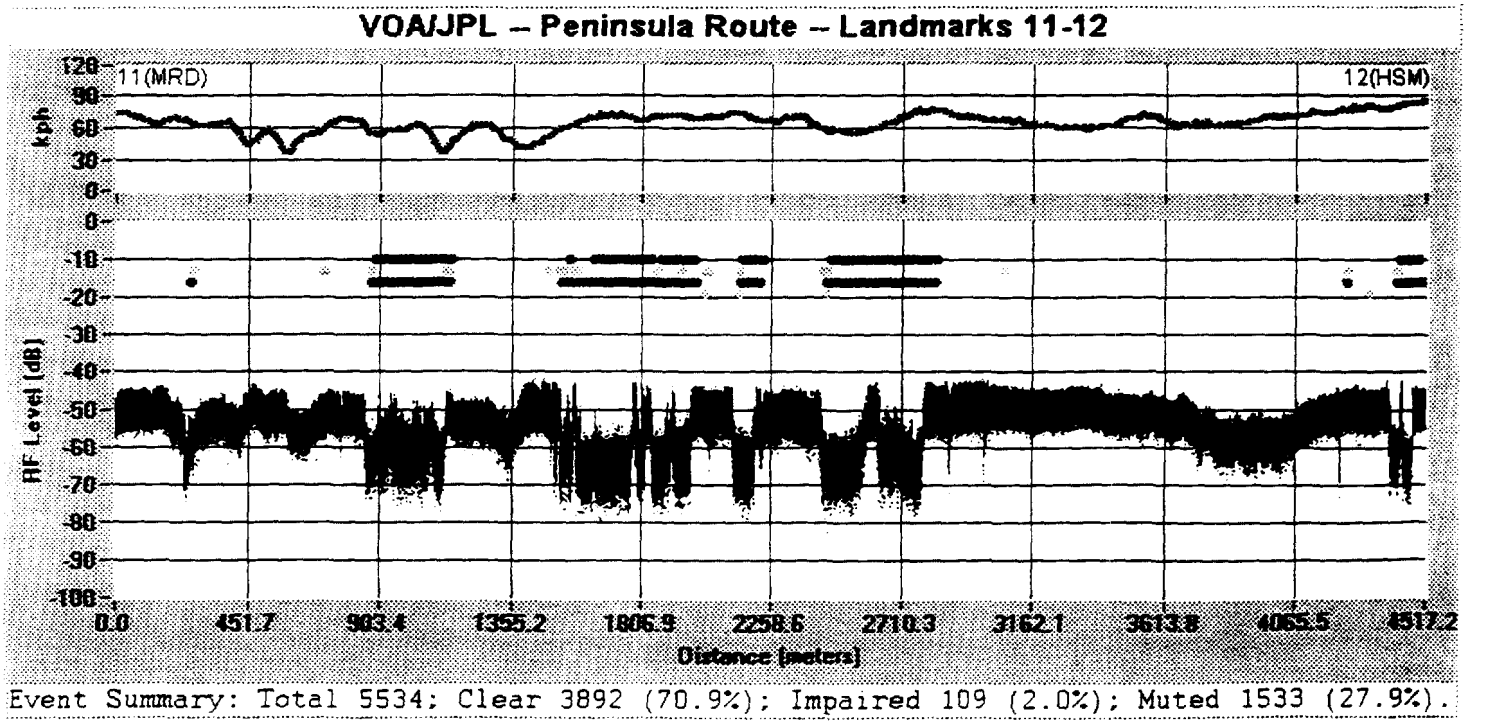
Event Summary: Total 5943; Clear 5205 (87.7%); Impaired 254 (4.3%); Muted 484 (8.2%).



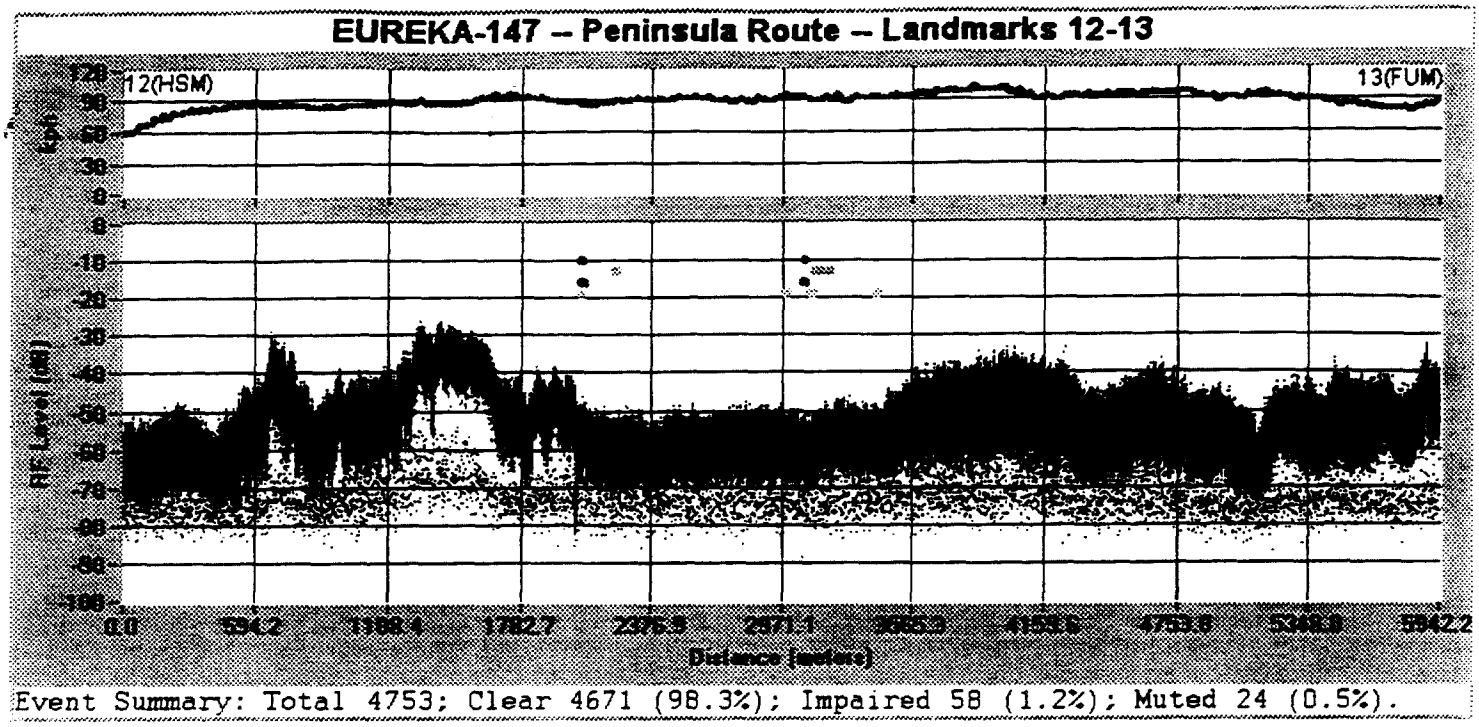
Event Summary: Total 5591; Clear 24 (0.4%); Impaired 89 (1.6%); Muted 5478 (98.0%).



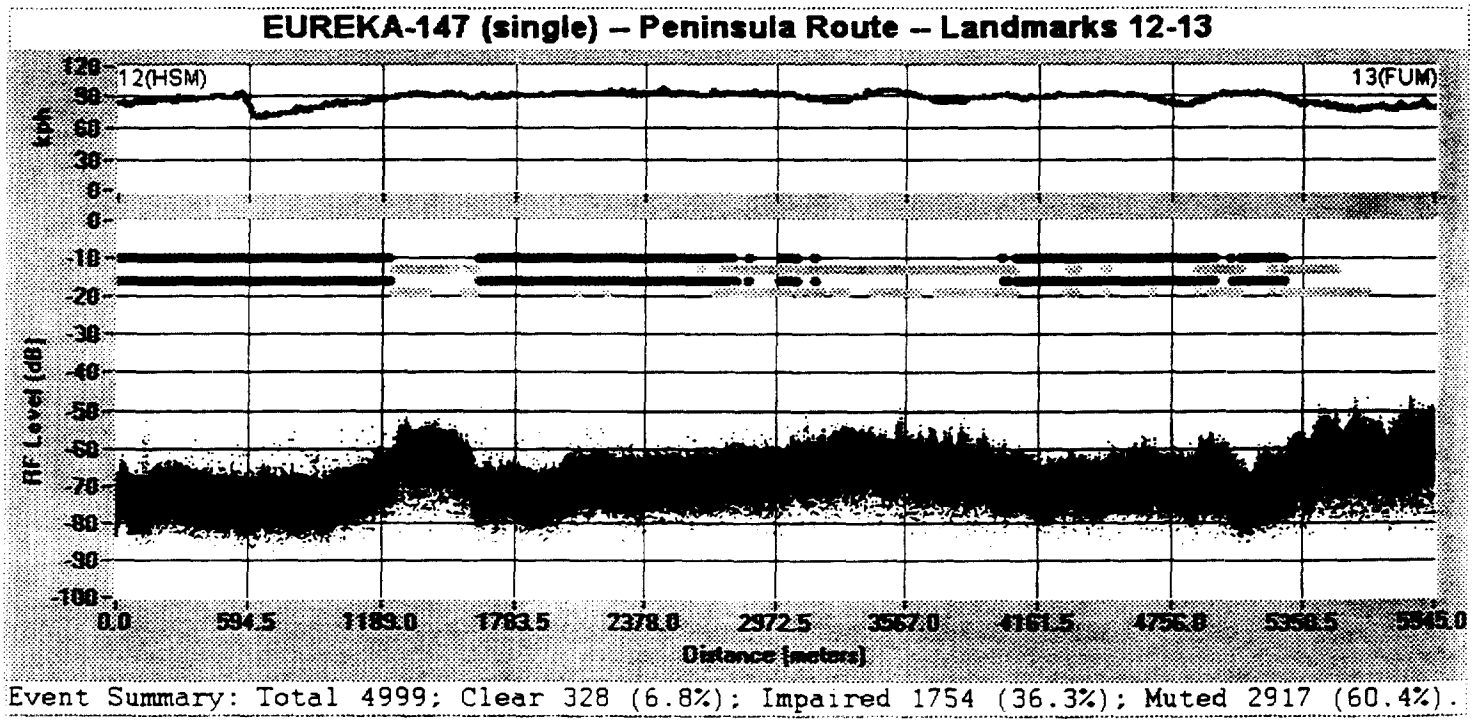
Event Summary: Total 7367; Clear 304 (4.1%); Impaired 52 (0.7%); Muted 7011 (95.2%).



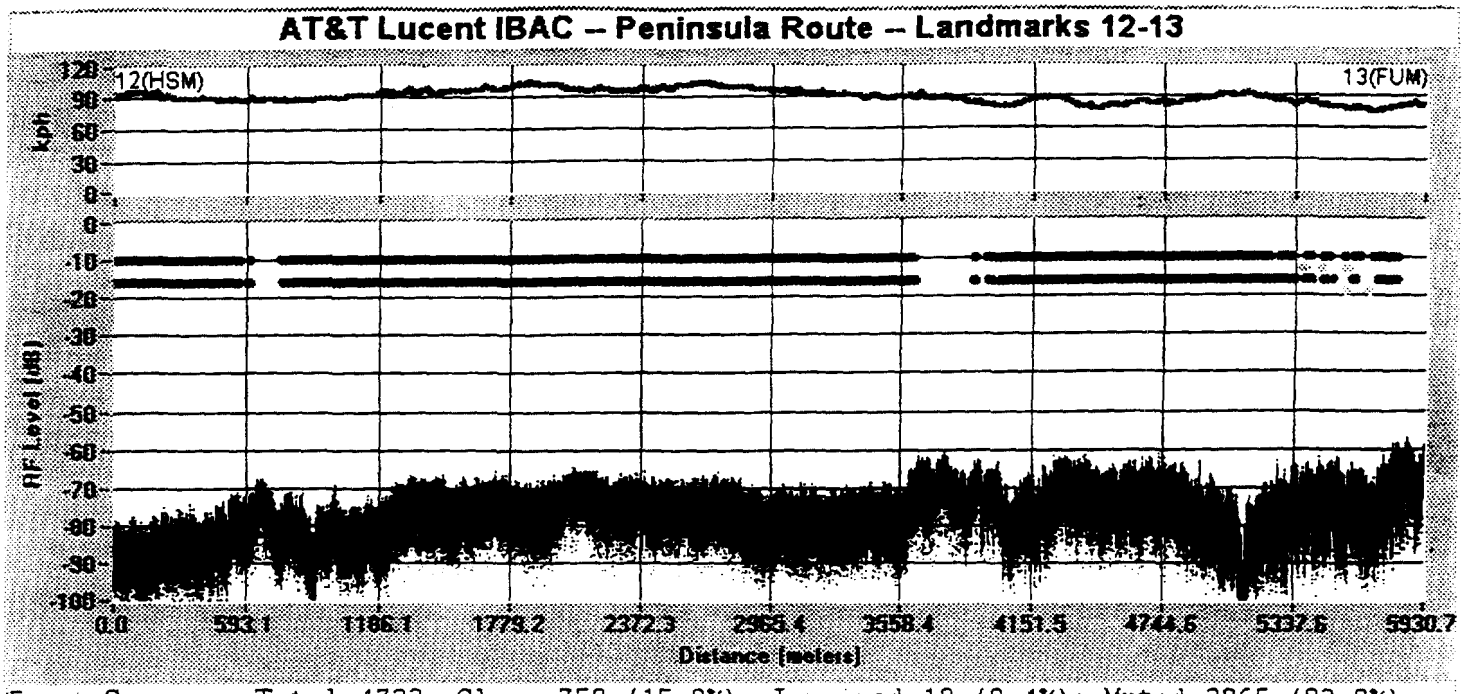
Event Summary: Total 5534; Clear 3892 (70.9%); Impaired 109 (2.0%); Muted 1533 (27.9%).



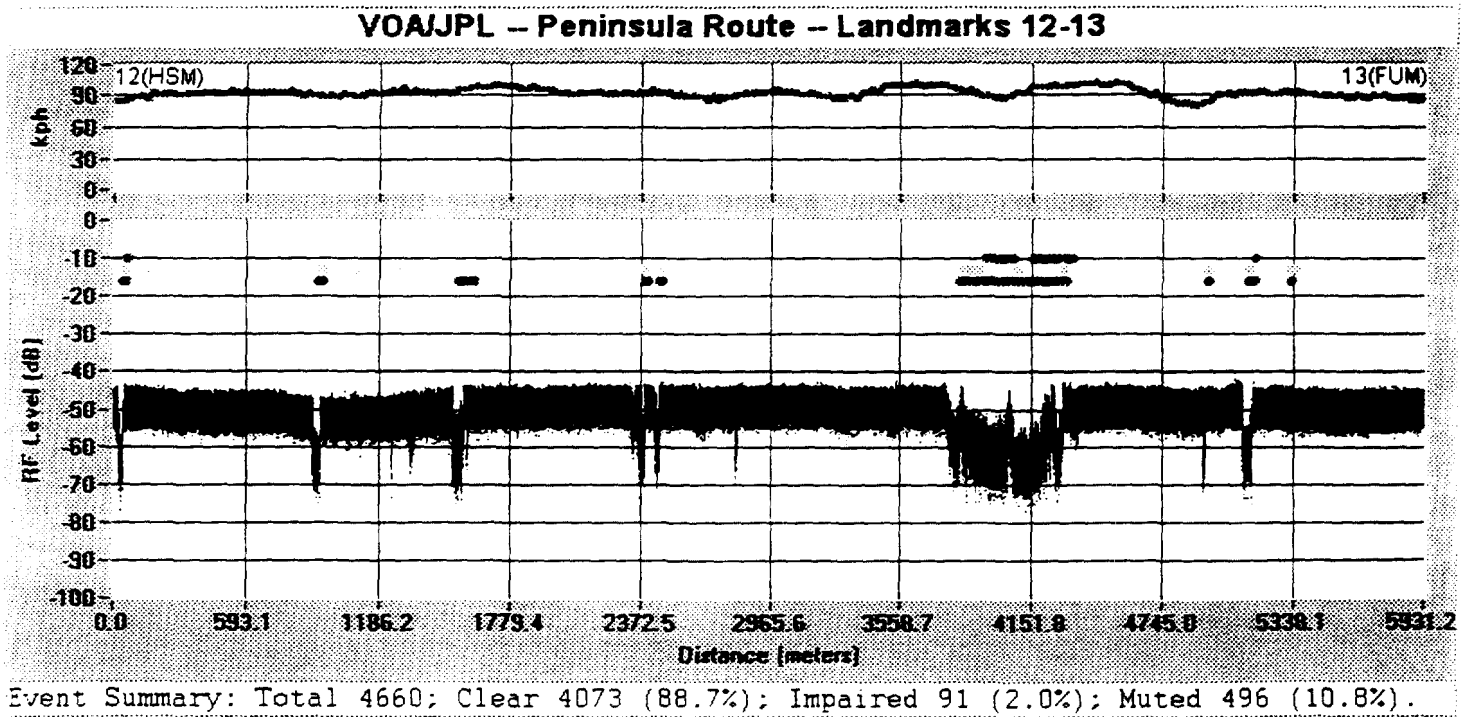
Event Summary: Total 4753; Clear 4671 (98.3%); Impaired 58 (1.2%); Muted 24 (0.5%).



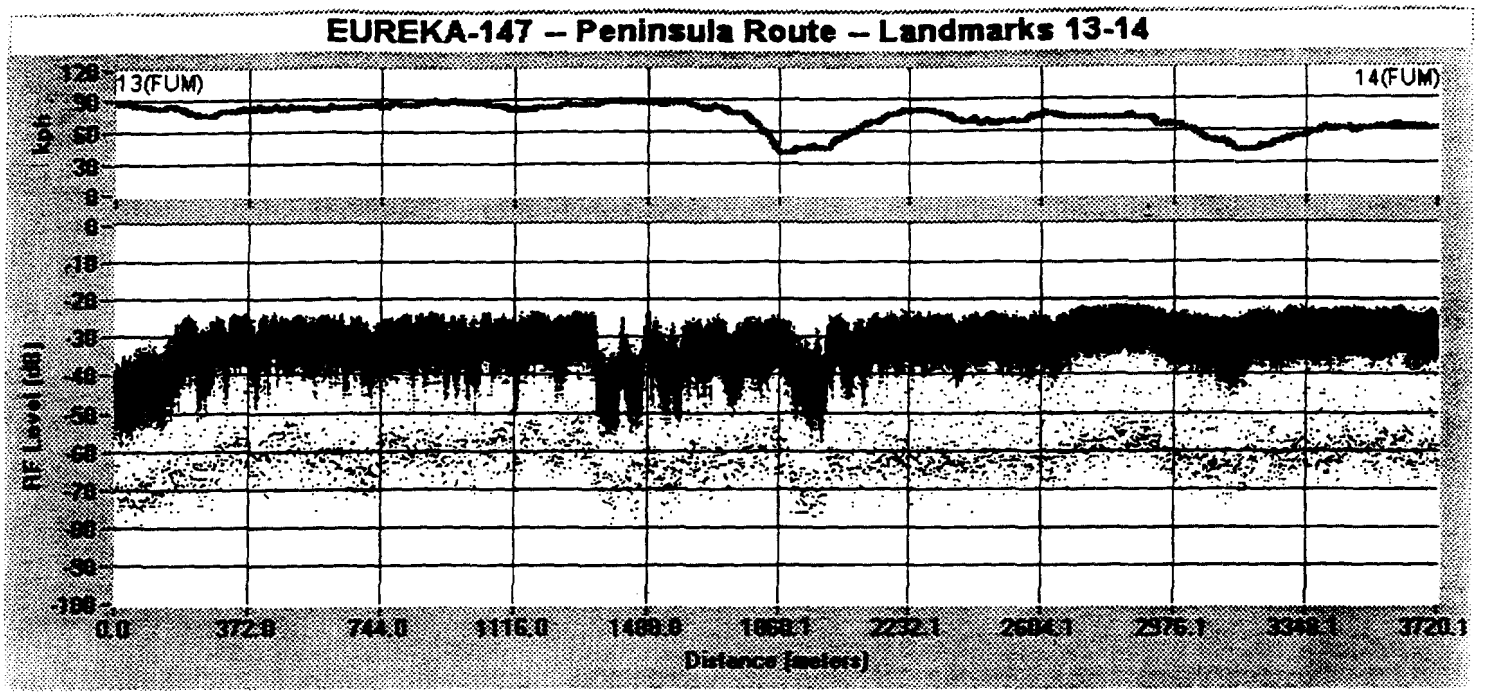
Event Summary: Total 4999; Clear 328 (6.8%); Impaired 1754 (36.3%); Muted 2917 (60.4%).



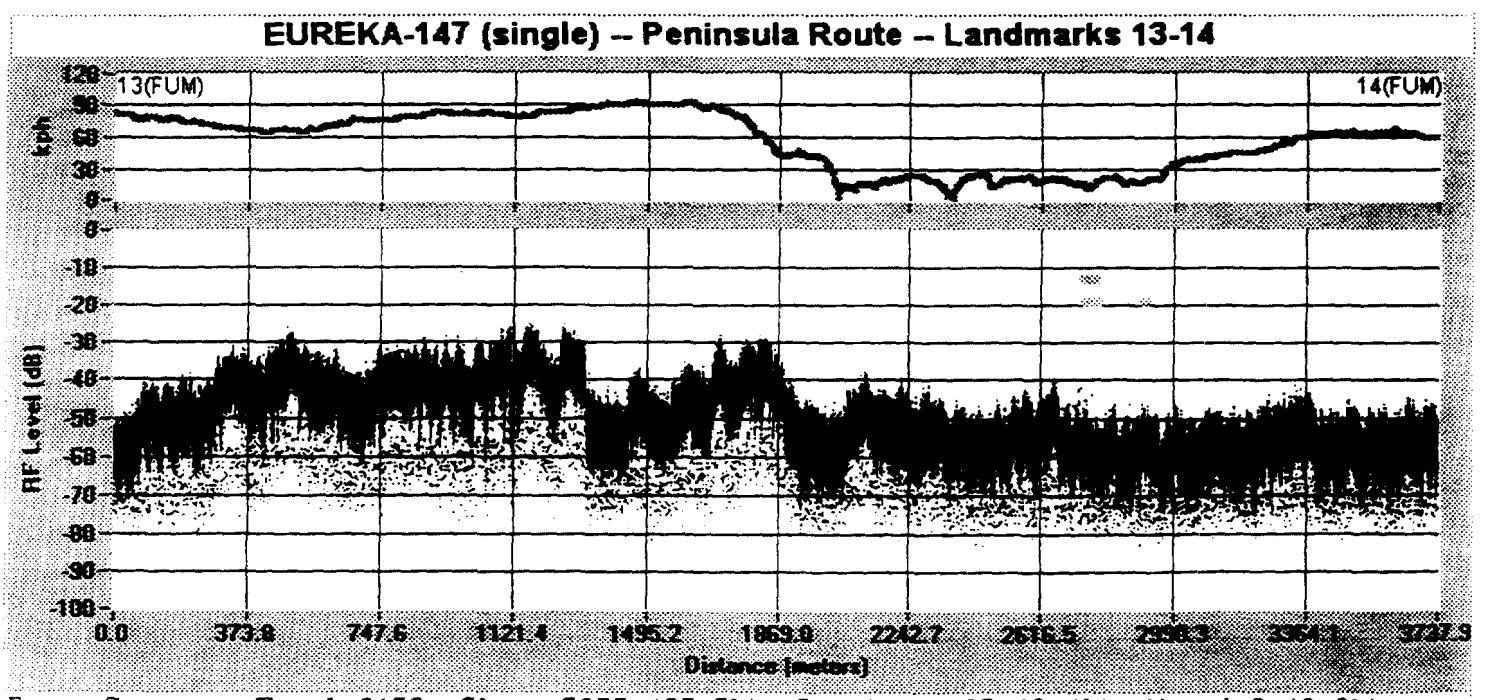
Event Summary: Total 4733; Clear 750 (15.8%); Impaired 18 (0.4%); Muted 3965 (83.8%).



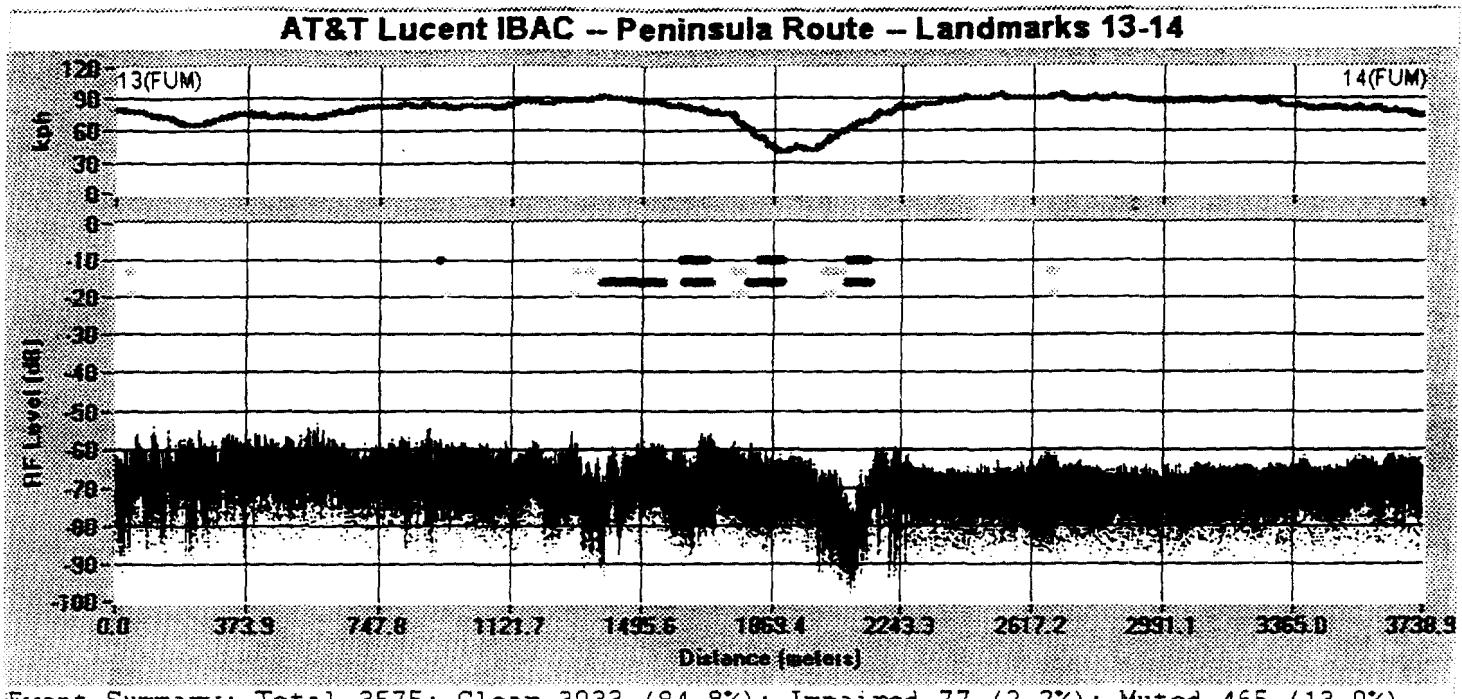
Event Summary: Total 4660; Clear 4073 (88.7%); Impaired 91 (2.0%); Muted 496 (10.8%).



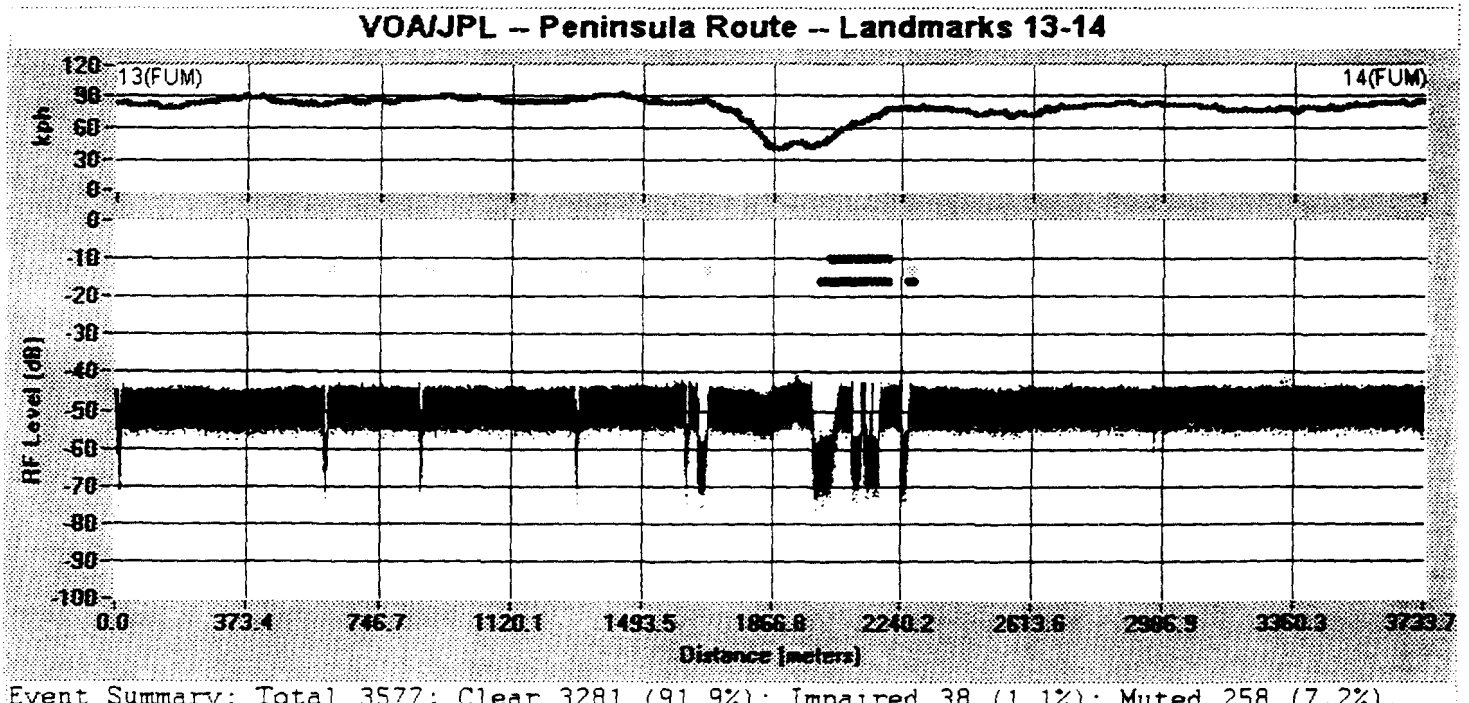
Event Summary: Total 3977; Clear 3977 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).



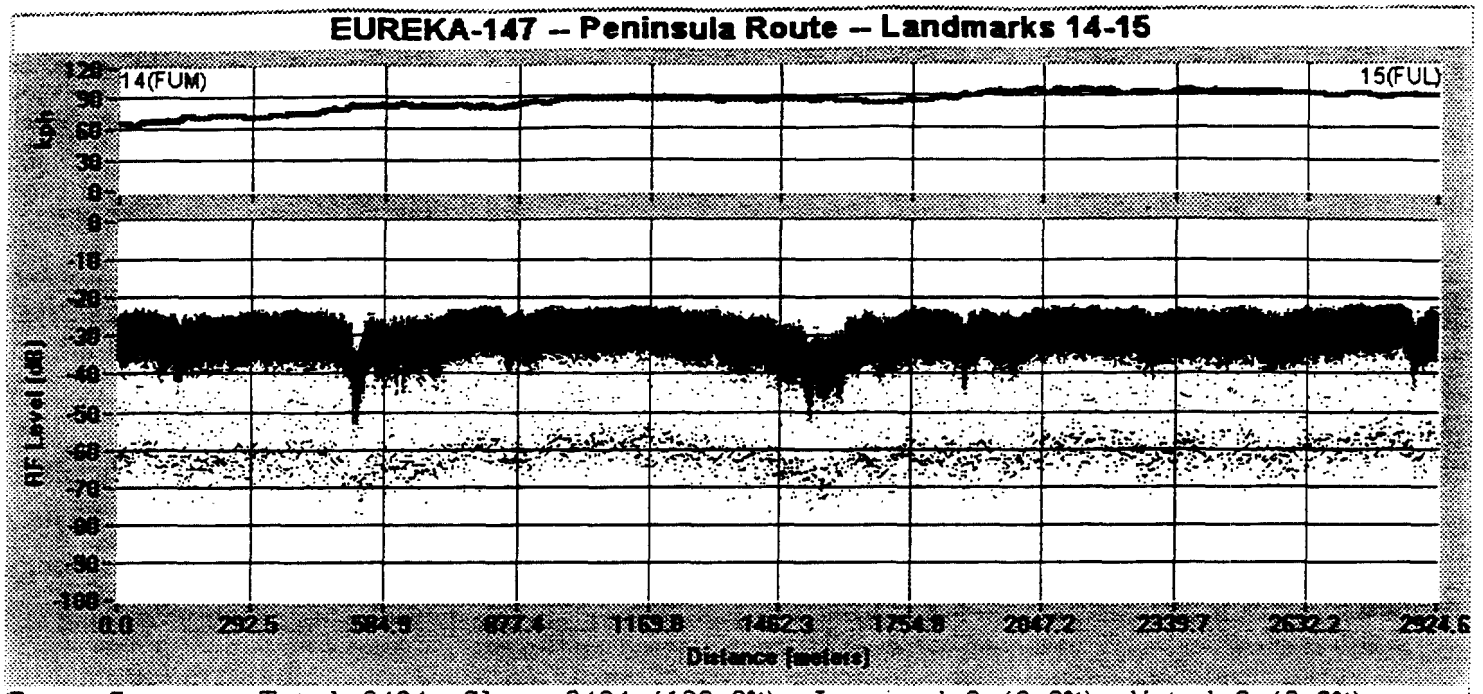
Event Summary: Total 8152; Clear 7955 (97.5%); Impaired 197 (2.4%); Muted 0 (0.0%).



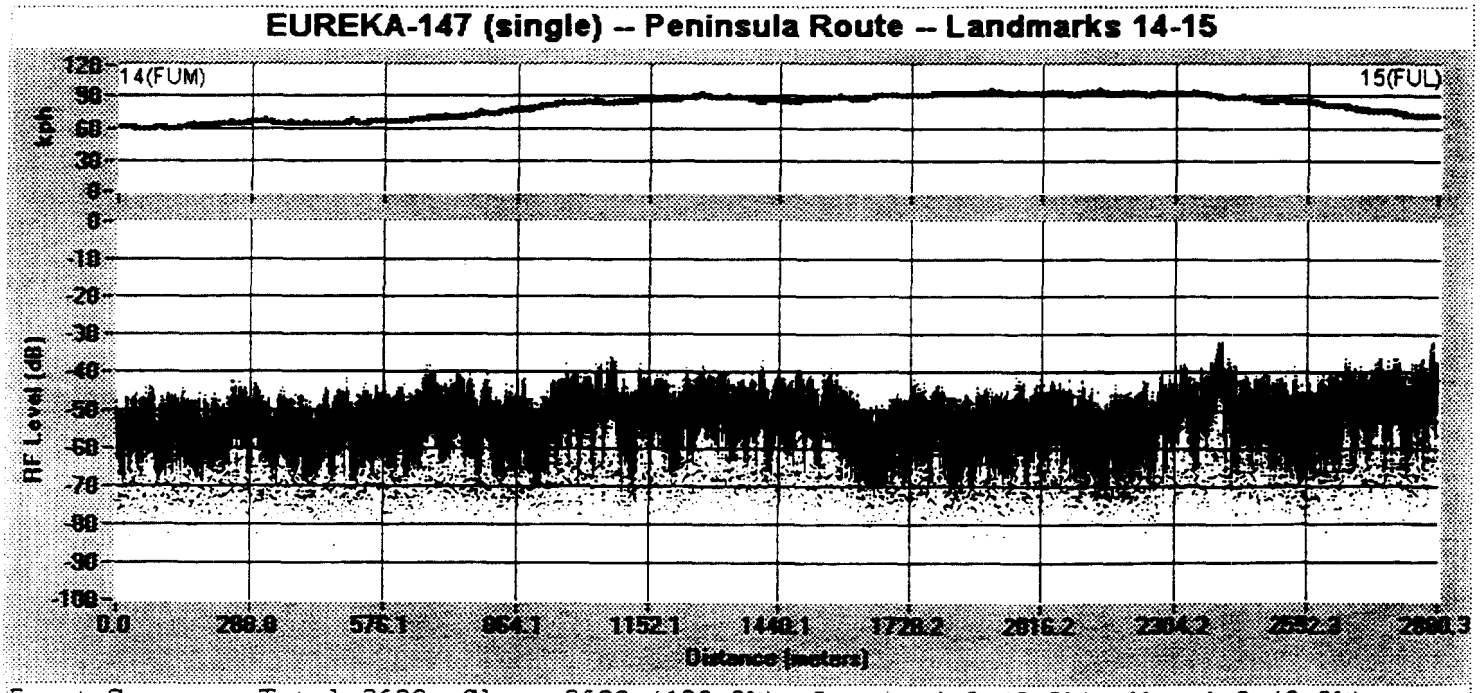
Event Summary: Total 3575; Clear 3033 (84.8%); Impaired 77 (2.2%); Muted 465 (13.0%).



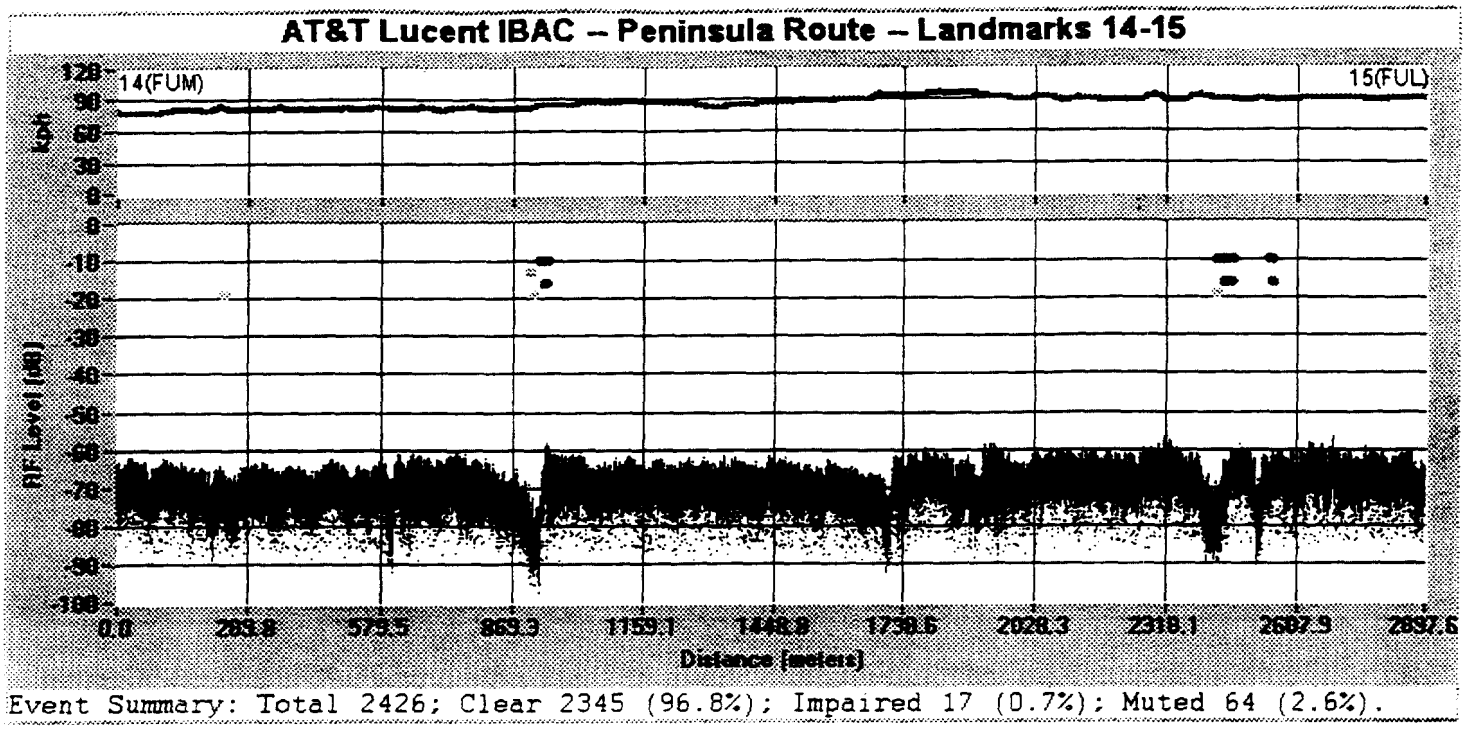
Event Summary: Total 3577; Clear 3281 (91.9%); Impaired 38 (1.1%); Muted 258 (7.2%).



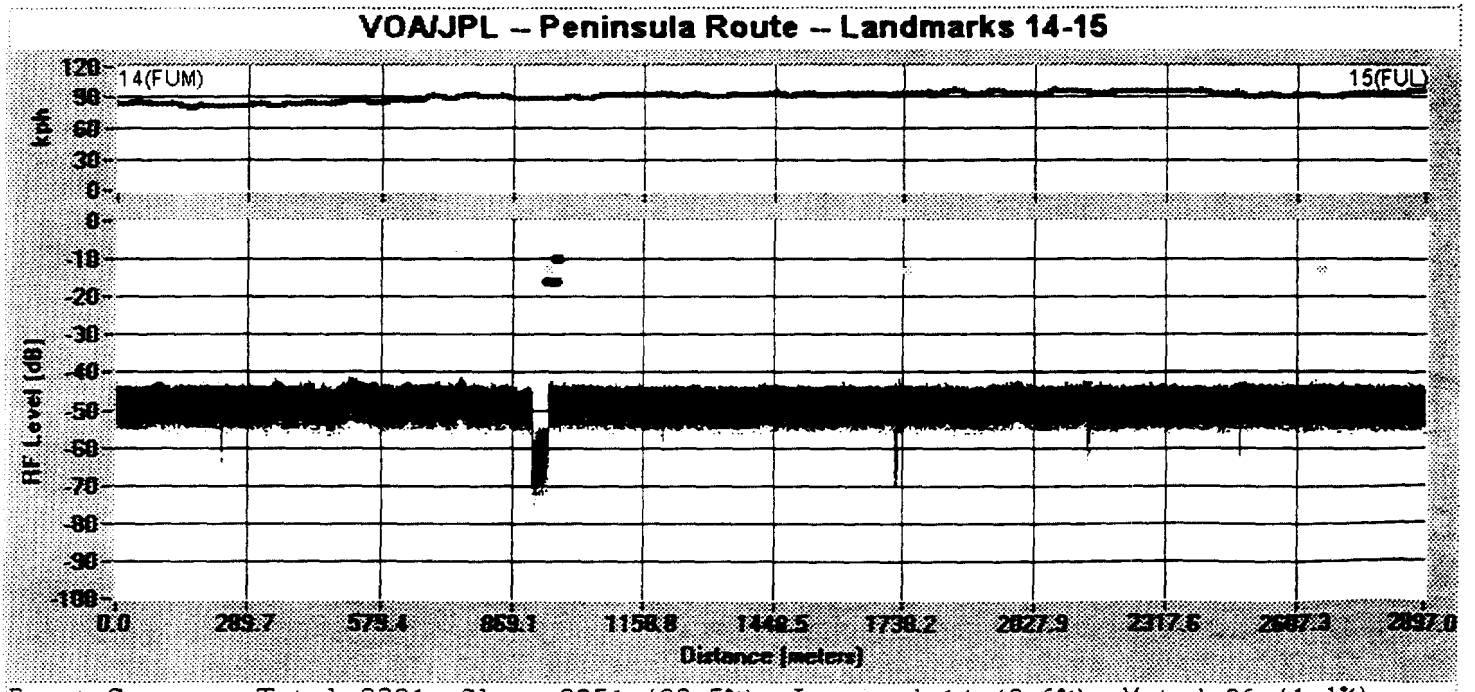
Event Summary: Total 2484; Clear 2484 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).



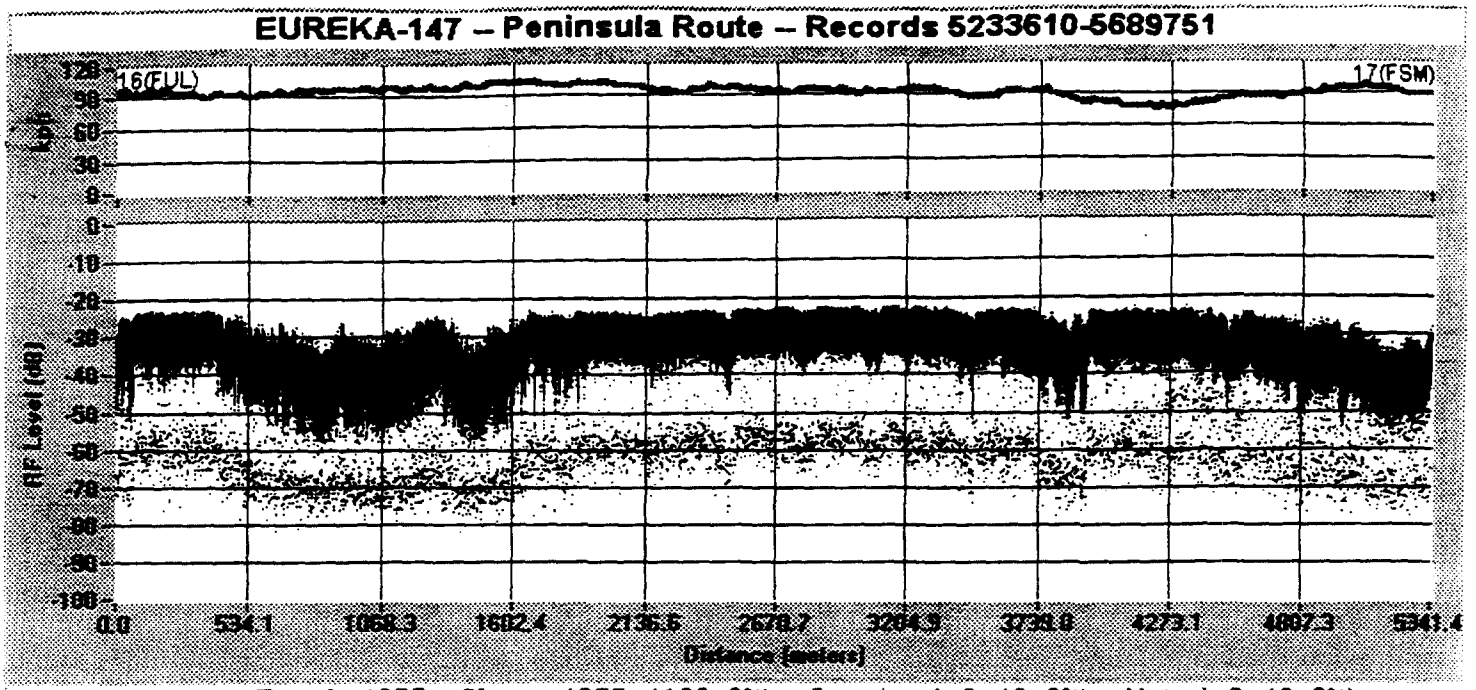
Event Summary: Total 2638; Clear 2638 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).



Event Summary: Total 2426; Clear 2345 (96.8%); Impaired 17 (0.7%); Muted 64 (2.6%).

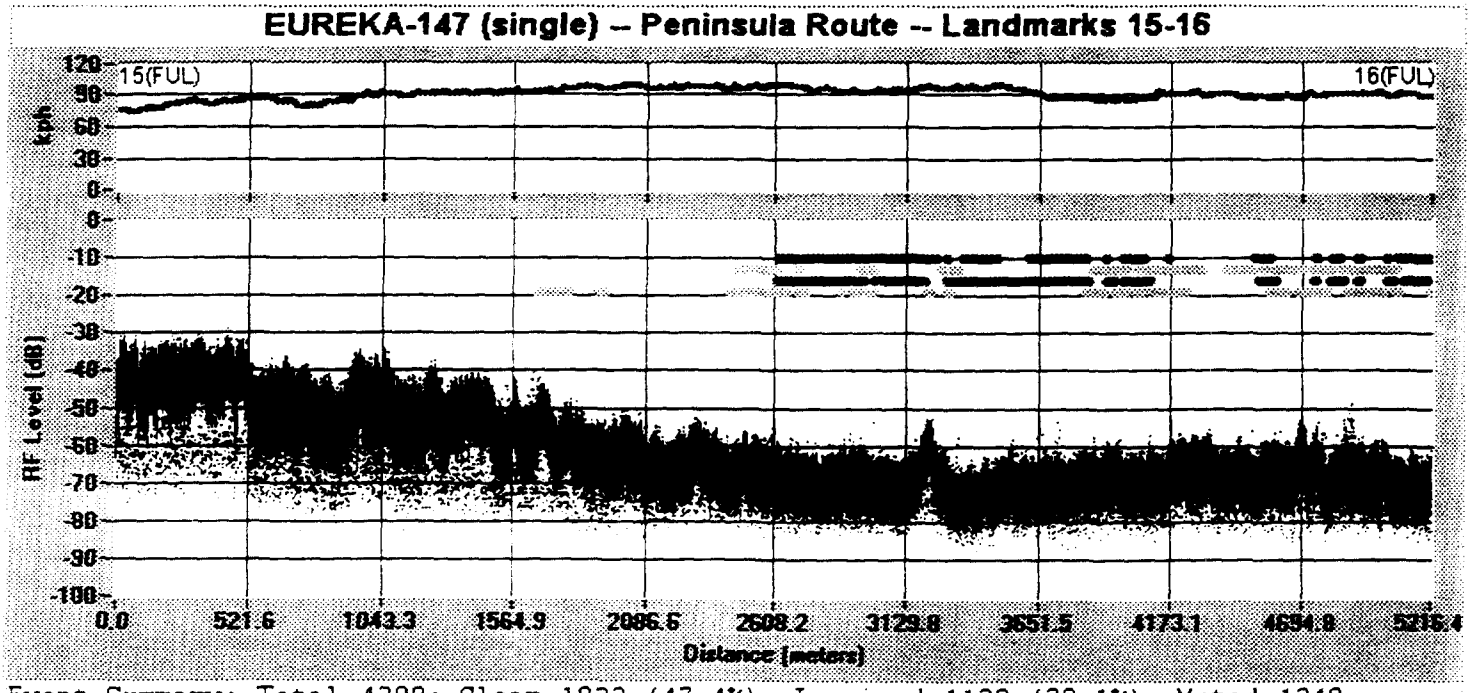


Event Summary: Total 2291; Clear 2251 (98.5%); Impaired 14 (0.6%); Muted 26 (1.1%).

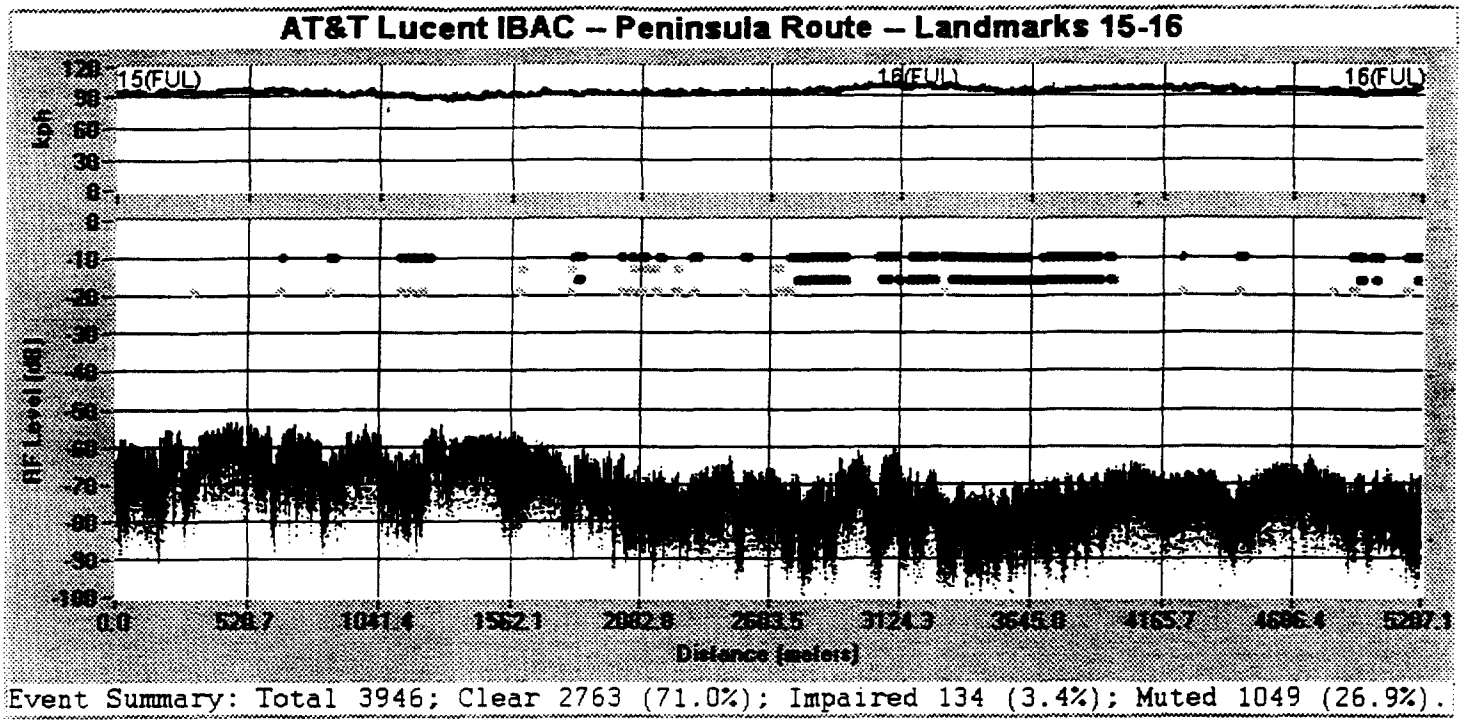


Event Summary: Total 4055; Clear 4055 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).

NOTE #1 & #6

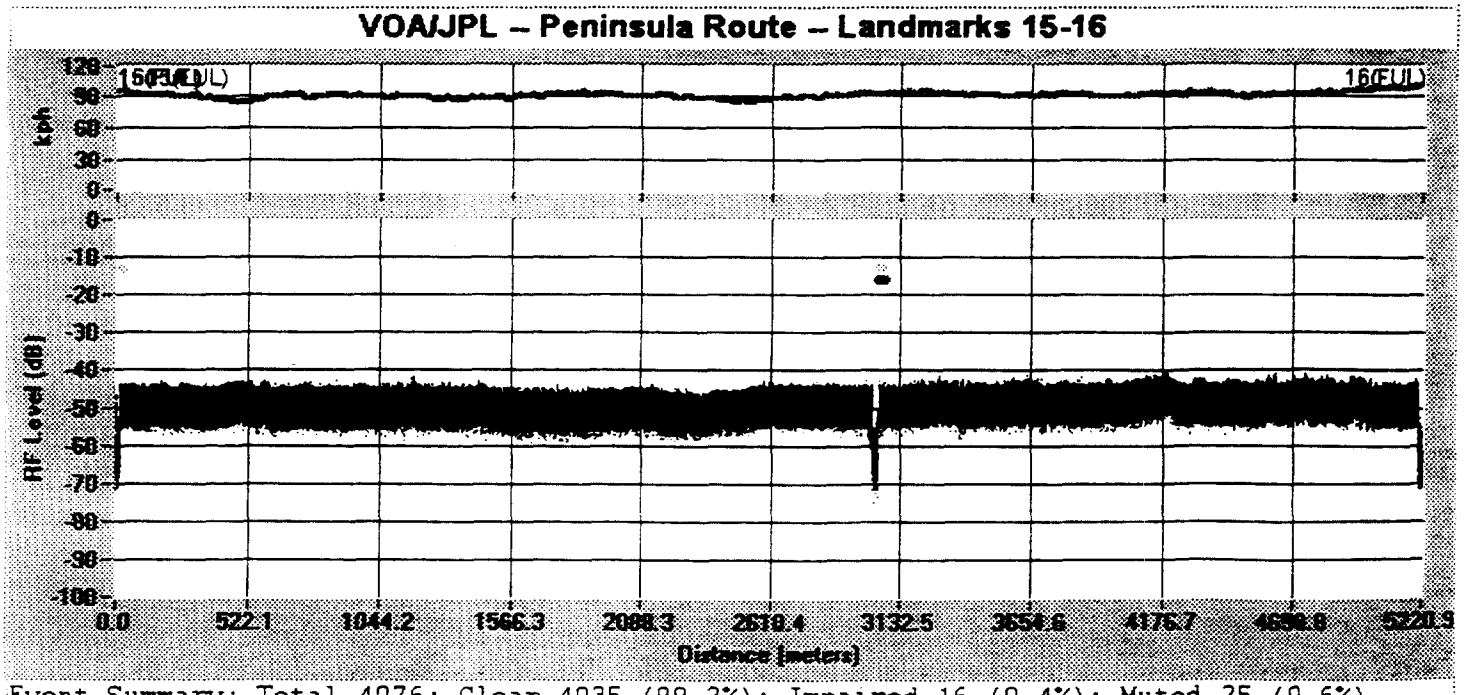


Event Summary: Total 4309; Clear 1922 (47.4%); Impaired 1138 (28.1%); Muted 1249



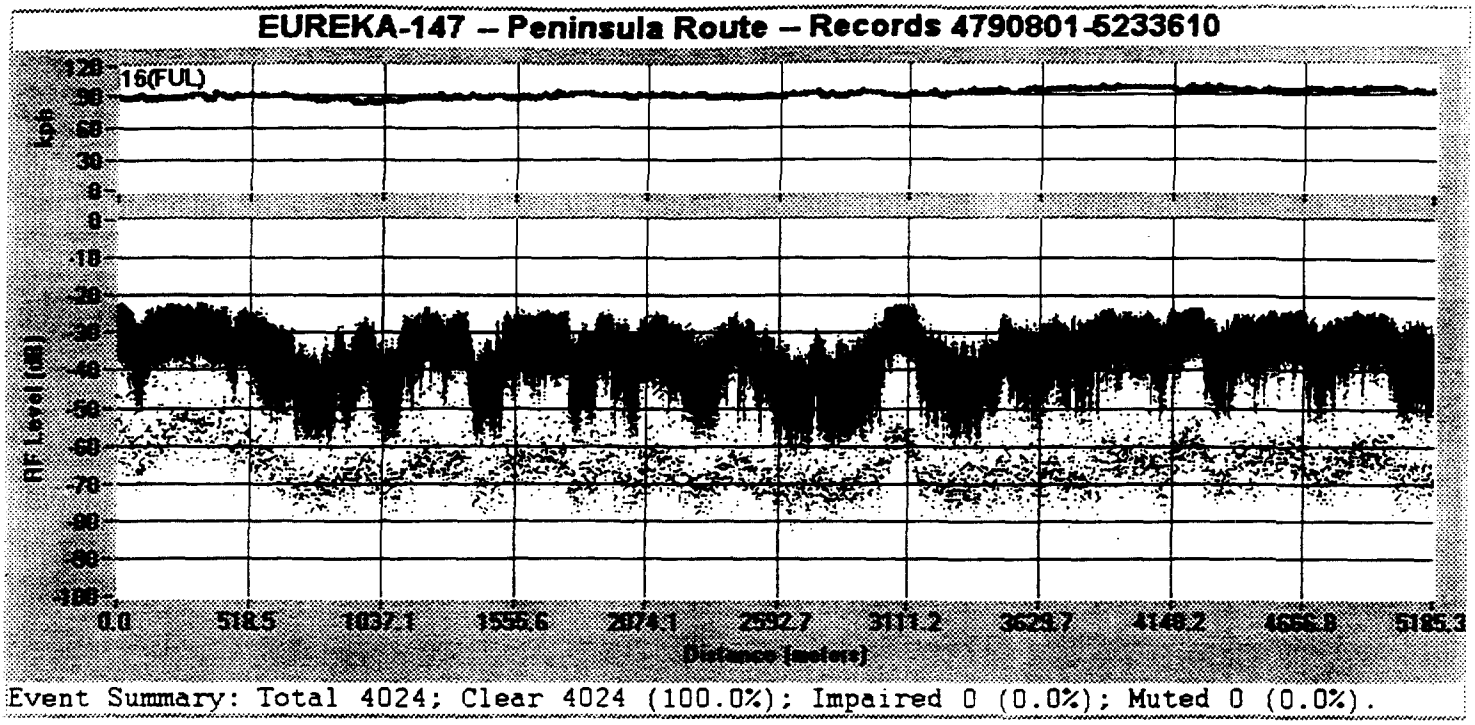
Event Summary: Total 3946; Clear 2763 (71.0%); Impaired 134 (3.4%); Muted 1049 (26.9%).

NOTE #2 & #6



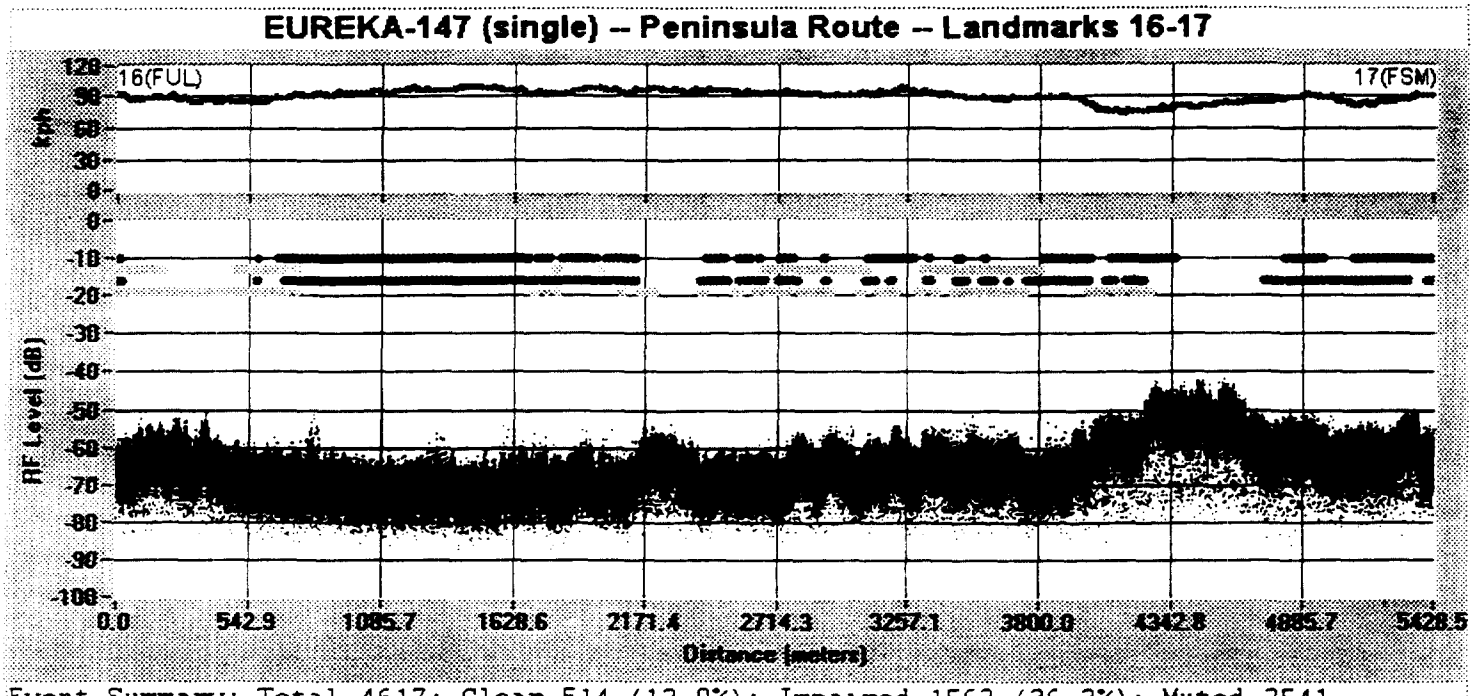
Event Summary: Total 4076; Clear 4035 (99.2%); Impaired 16 (0.4%); Muted 25 (0.6%).

NOTE #2 & #6

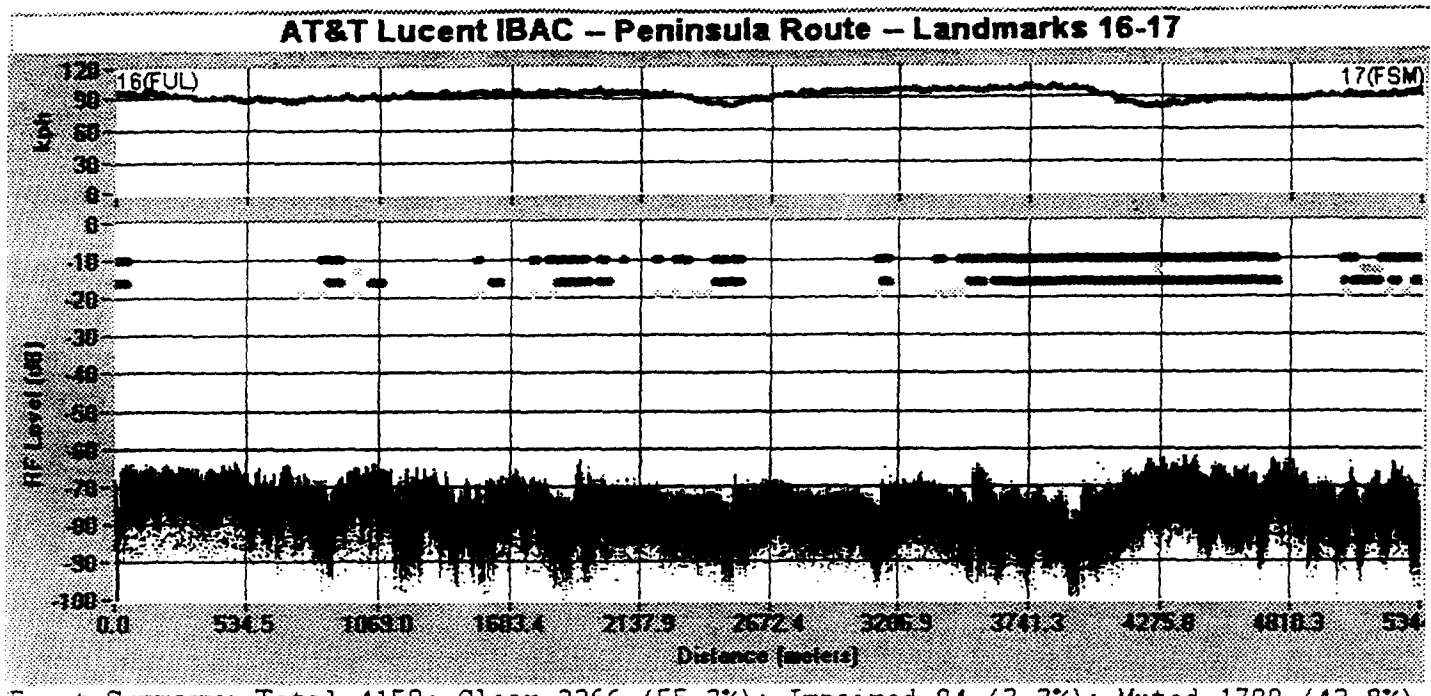


Event Summary: Total 4024; Clear 4024 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).

NOTE # 2 & #6

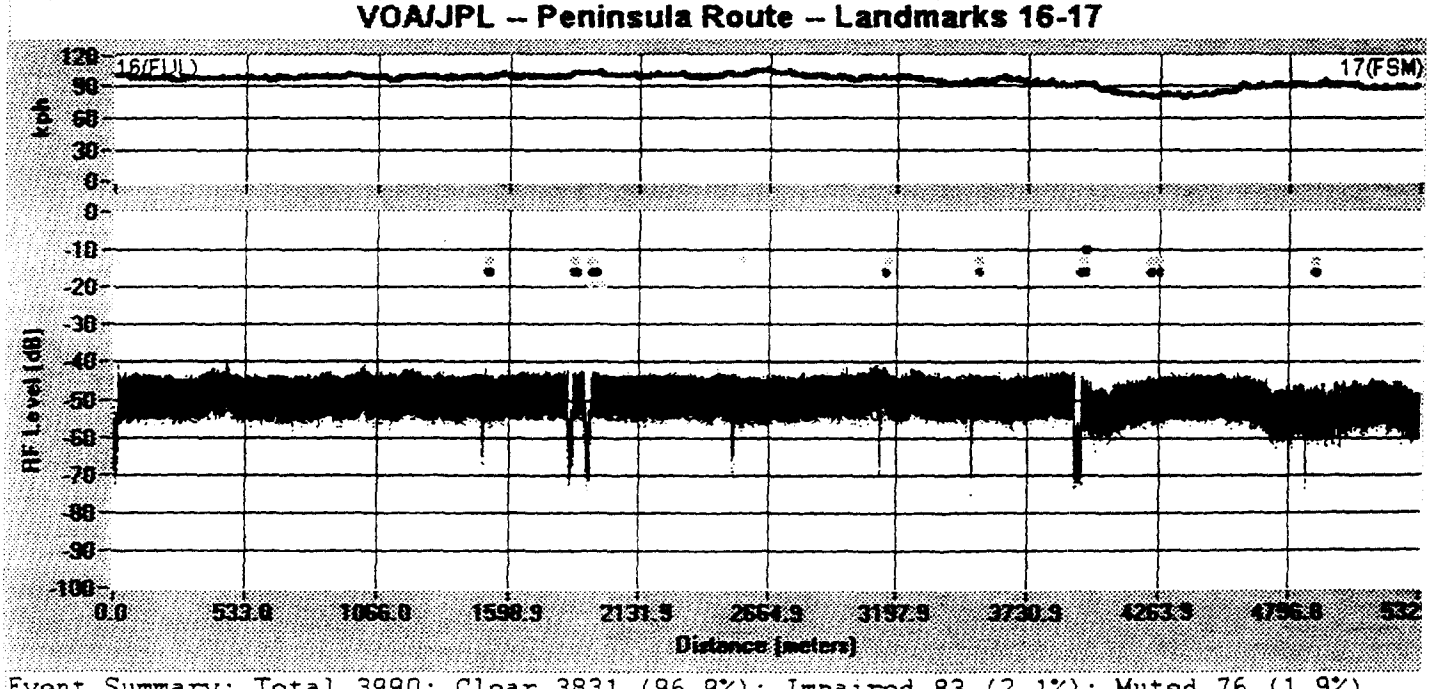


Event Summary: Total 4617; Clear 514 (12.0%); Impaired 1562 (36.3%); Muted 2541



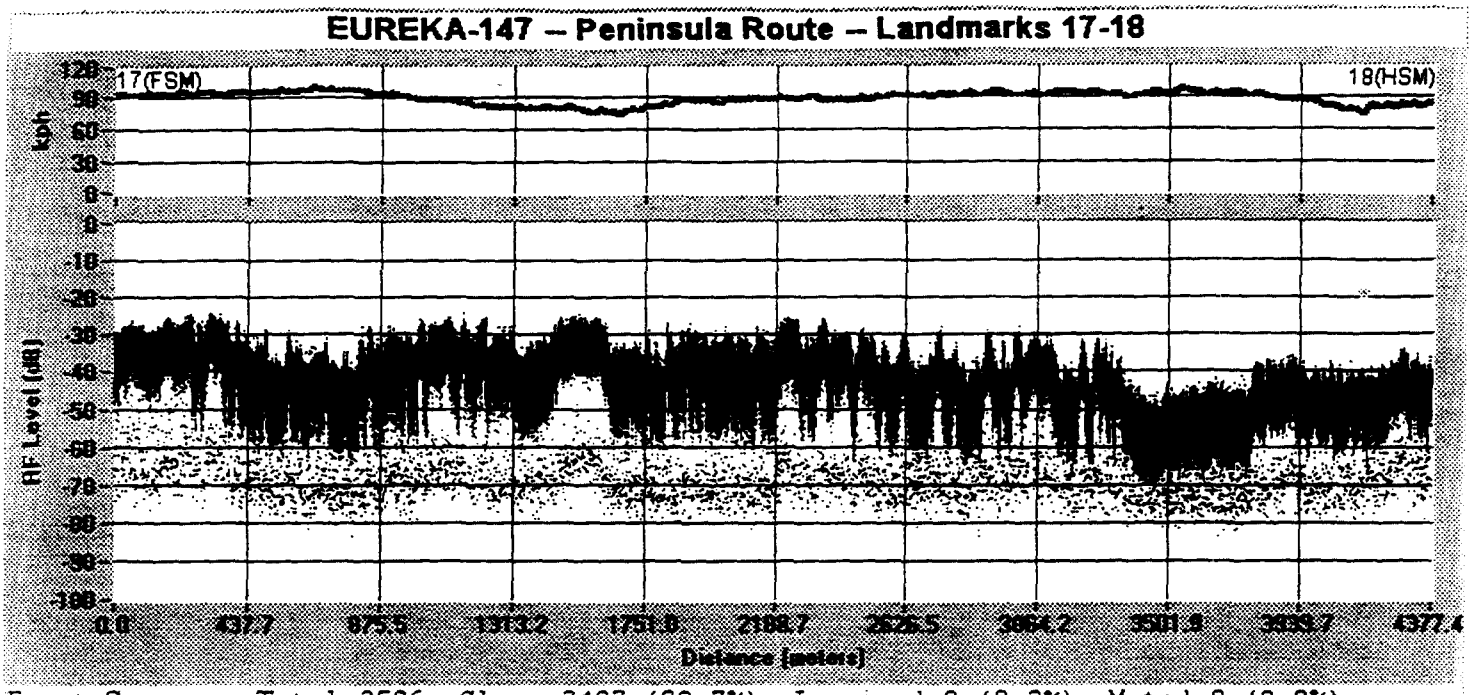
Event Summary: Total 4159; Clear 2266 (55.2%); Impaired 94 (2.3%); Muted 1799 (43.8%).

NOTE #6

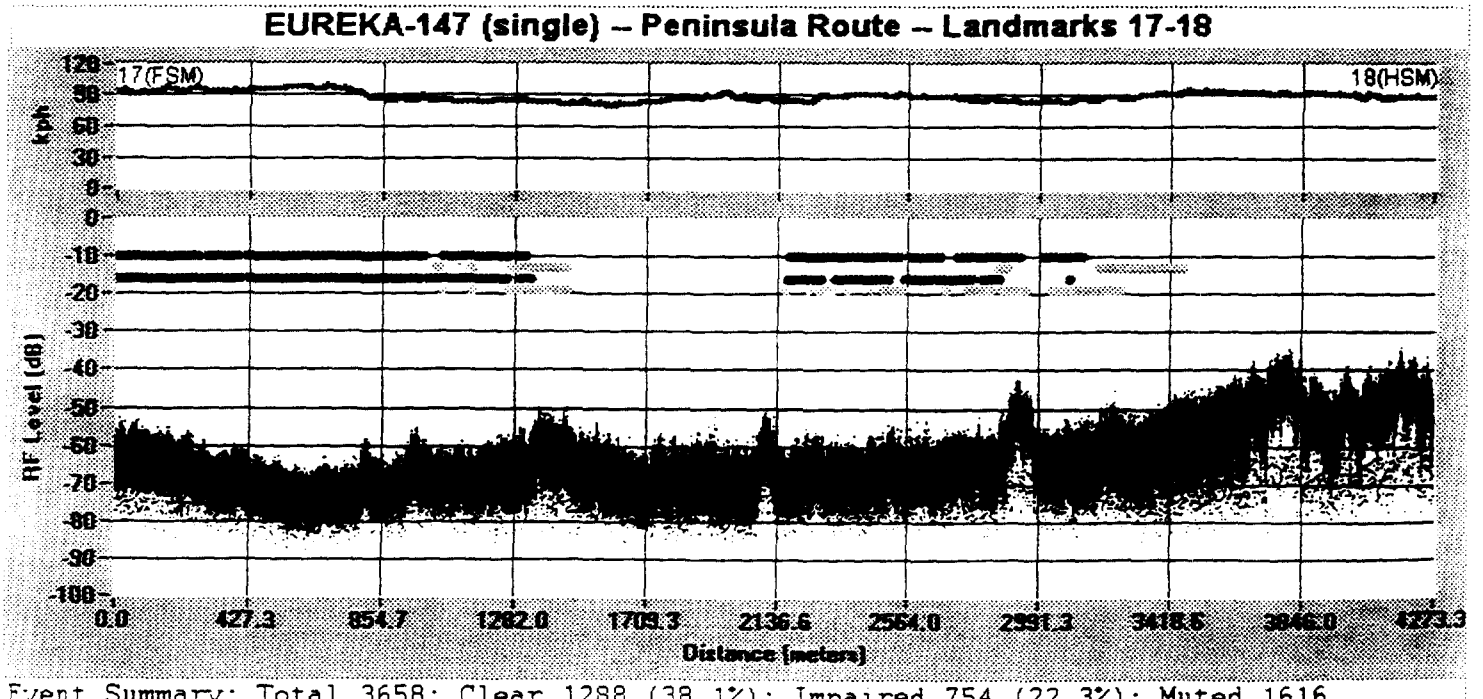


Event Summary: Total 3990; Clear 3831 (96.9%); Impaired 83 (2.1%); Muted 76 (1.9%).

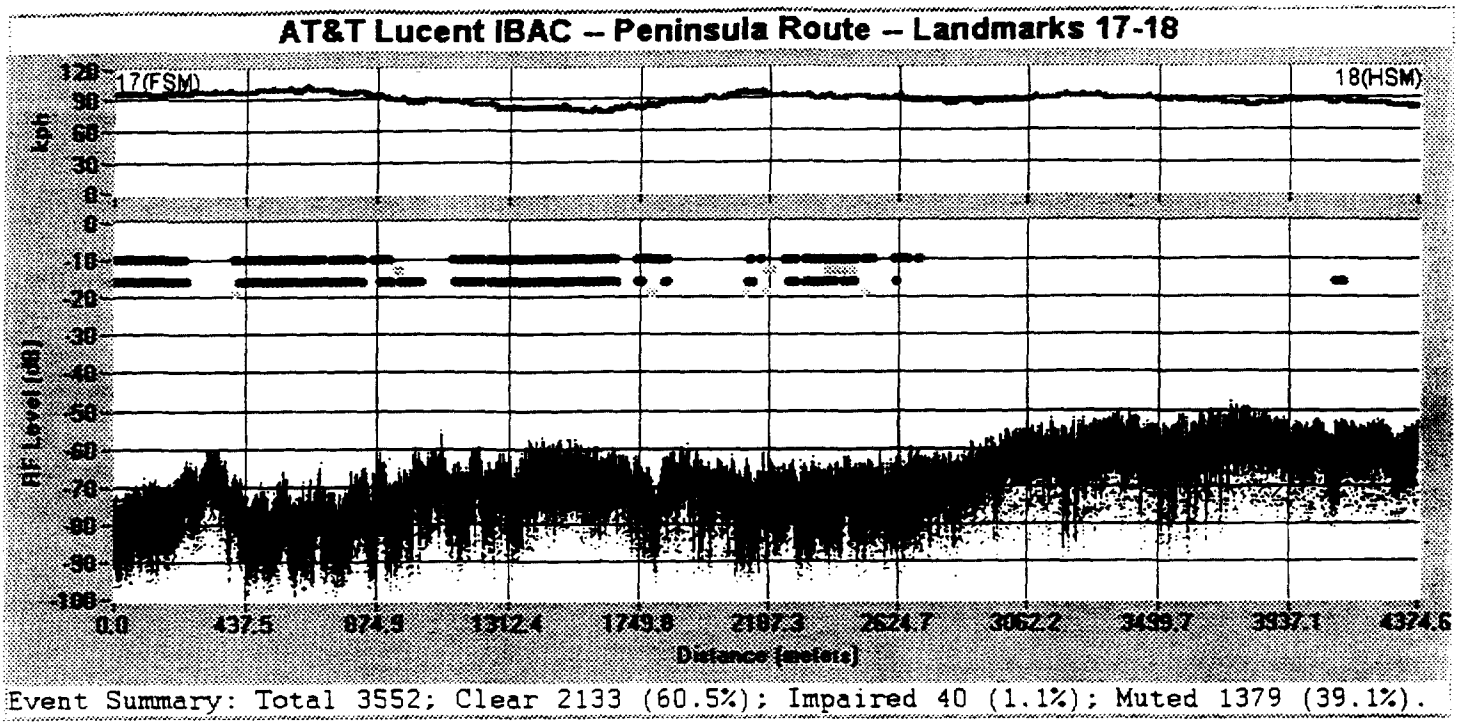
NOTE #6



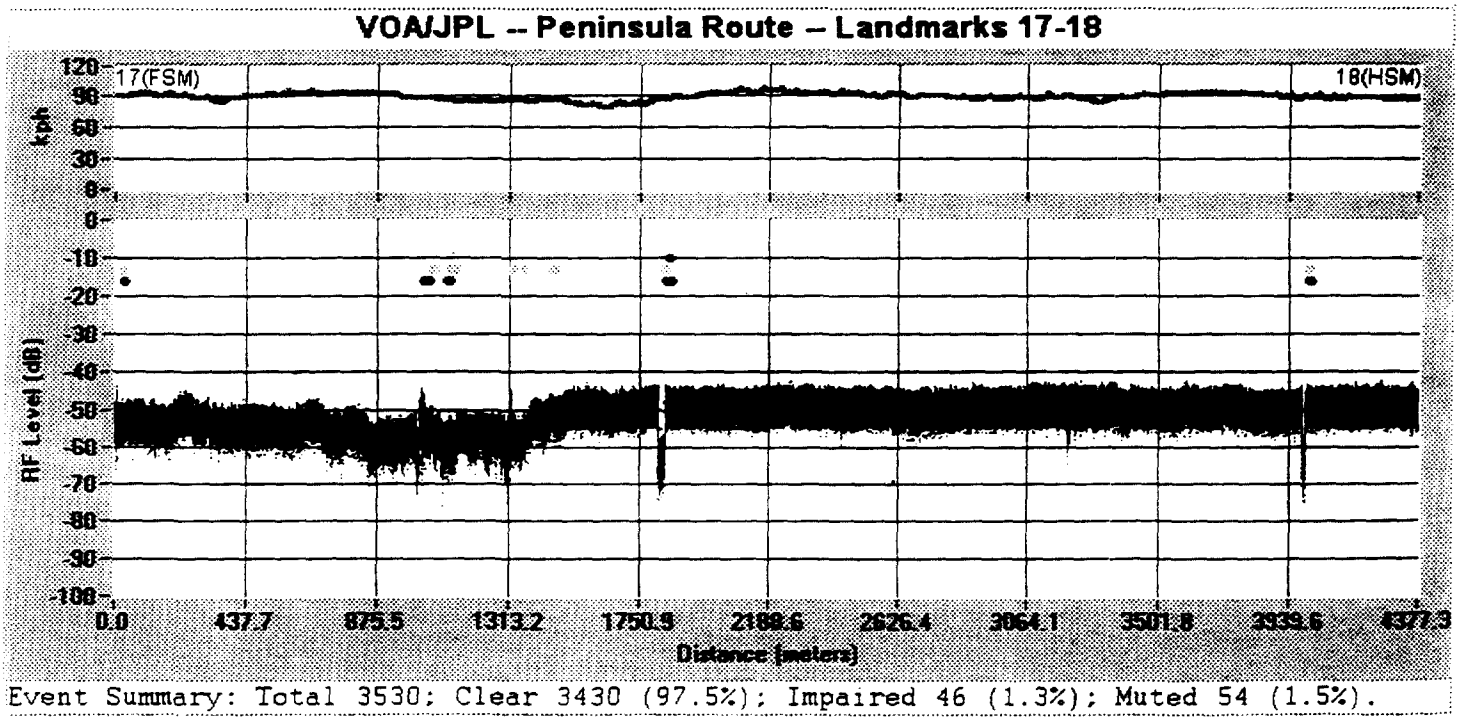
Event Summary: Total 3506; Clear 3497 (99.7%); Impaired 9 (0.3%); Muted 0 (0.0%).



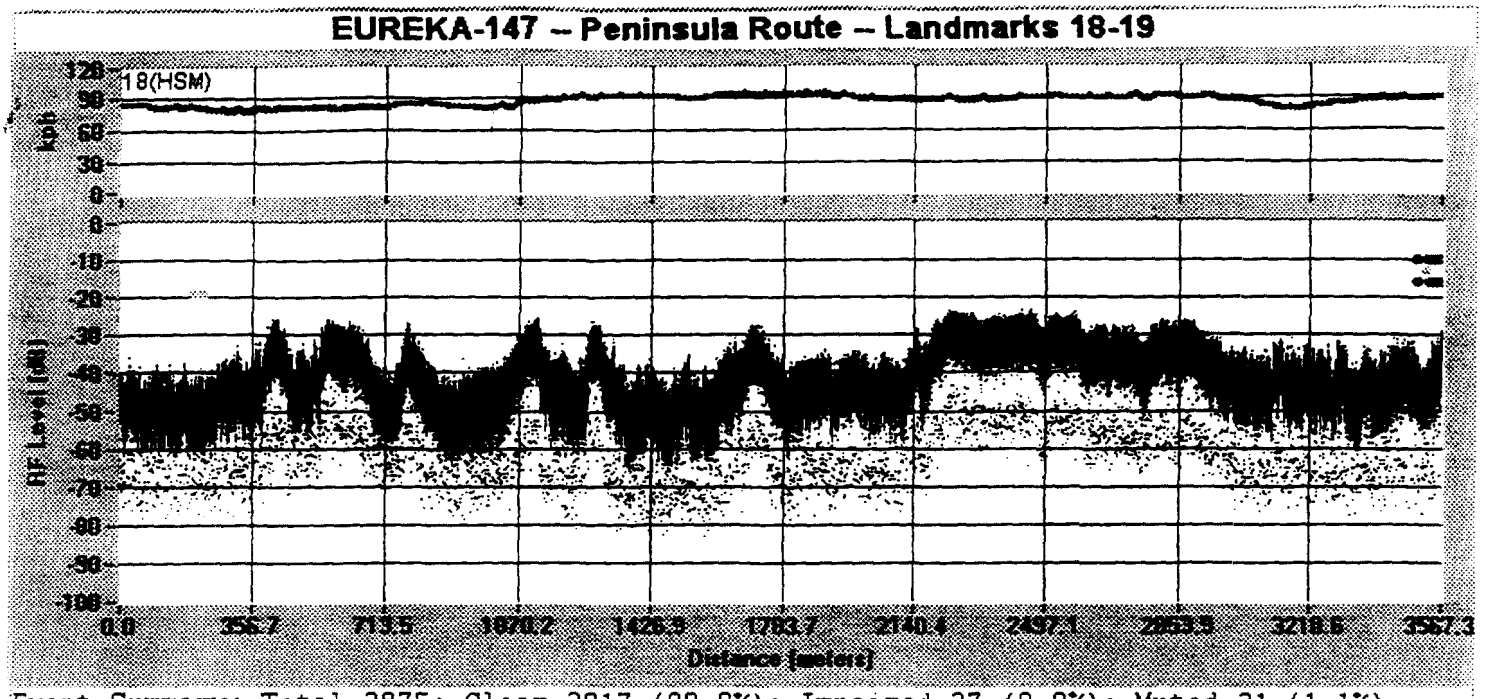
Event Summary: Total 3658; Clear 1288 (38.1%); Impaired 754 (22.3%); Muted 1616



Event Summary: Total 3552; Clear 2133 (60.5%); Impaired 40 (1.1%); Muted 1379 (39.1%).

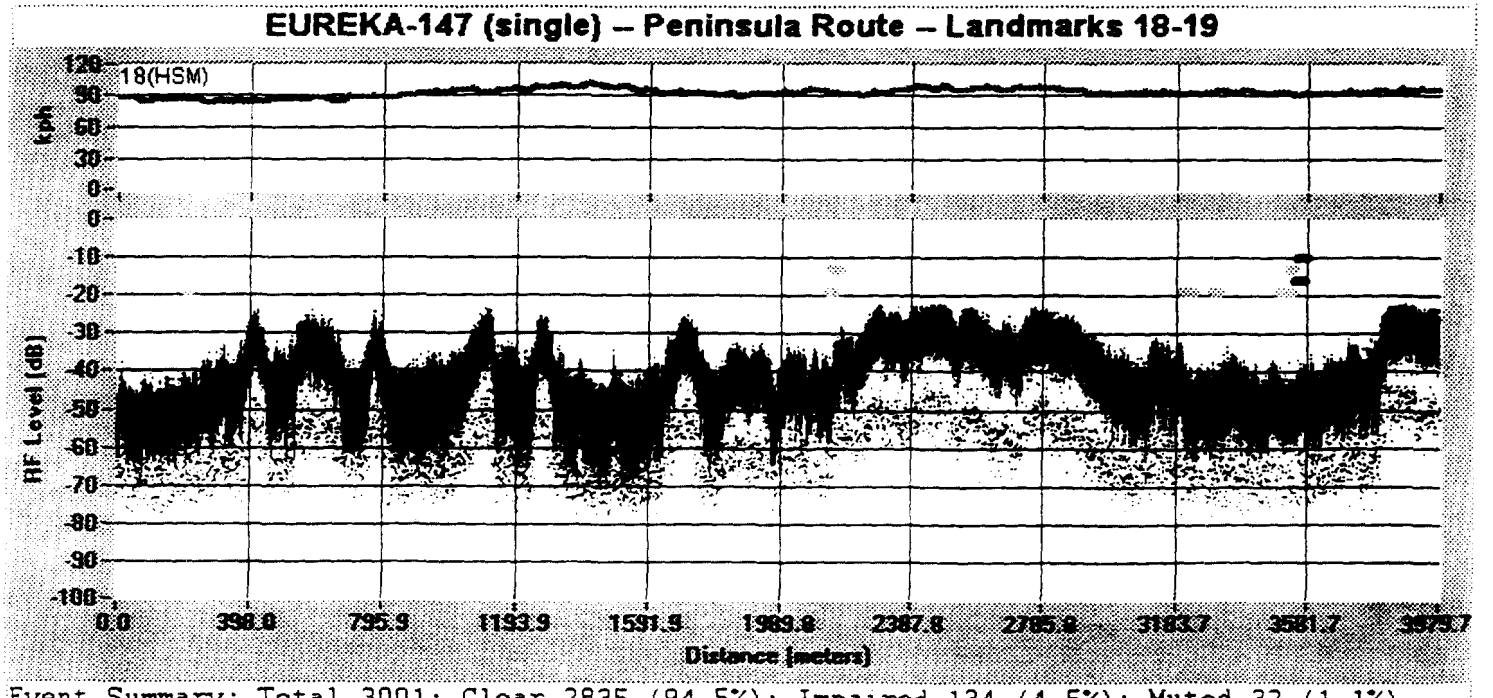


Event Summary: Total 3530; Clear 3430 (97.5%); Impaired 46 (1.3%); Muted 54 (1.5%).



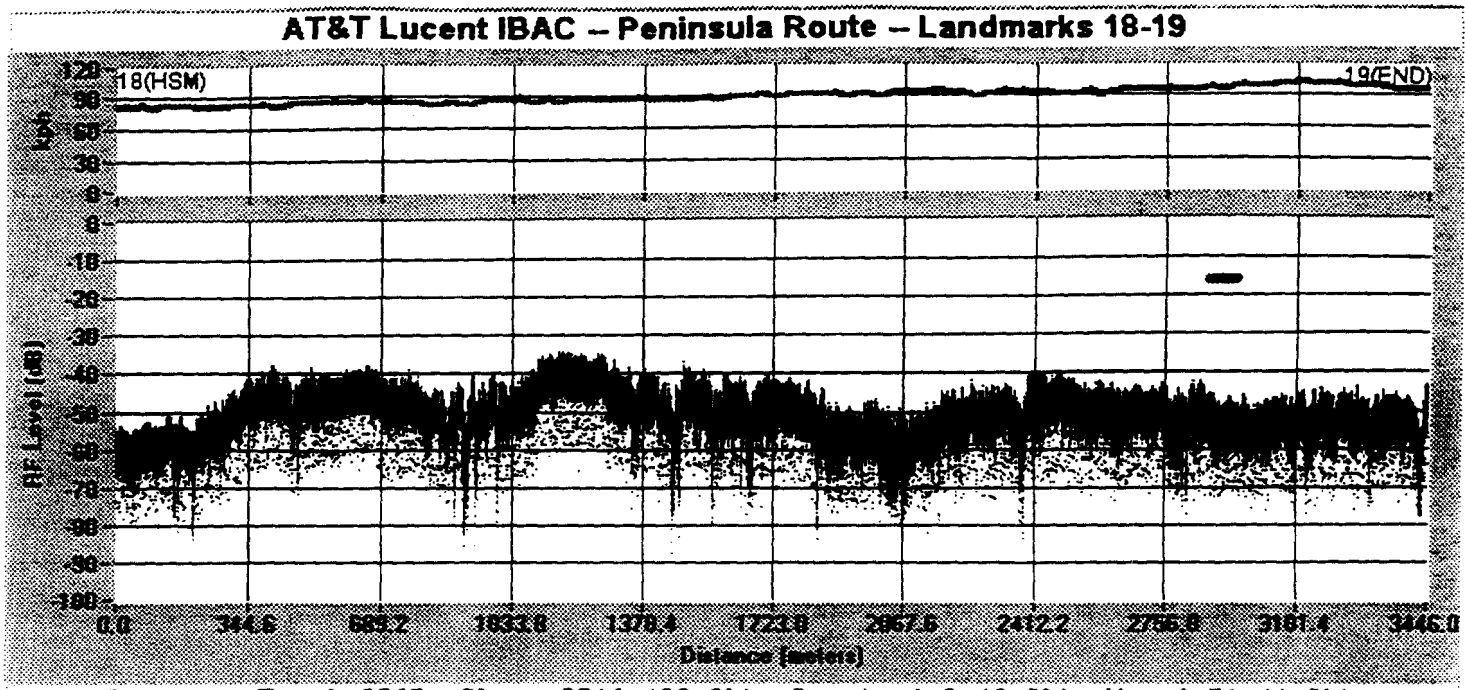
Event Summary: Total 2875; Clear 2817 (98.0%); Impaired 27 (0.9%); Muted 31 (1.1%).

NOTE #2

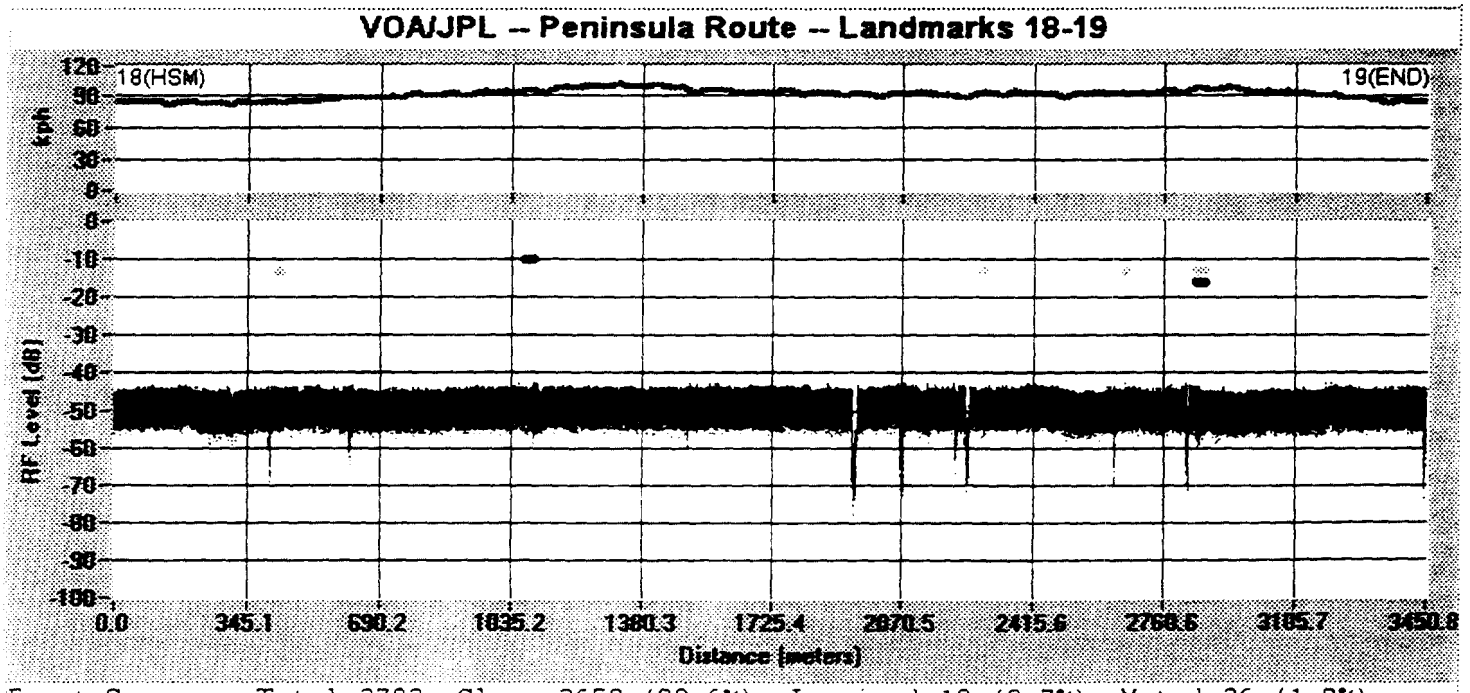


Event Summary: Total 3001; Clear 2835 (94.5%); Impaired 134 (4.5%); Muted 32 (1.1%).

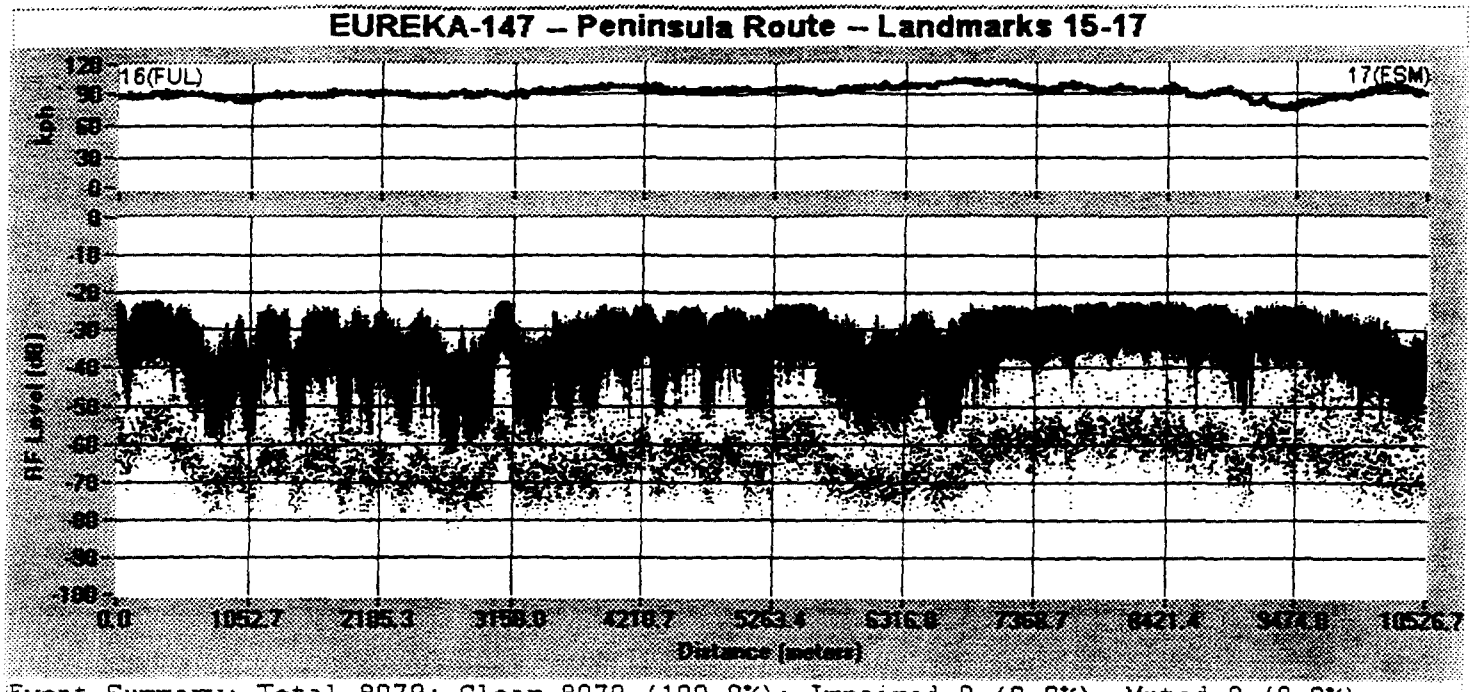
NOTE #2



Event Summary: Total 2767; Clear 2716 (98.2%); Impaired 0 (0.0%); Muted 51 (1.8%).



Event Summary: Total 2702; Clear 2658 (98.6%); Impaired 18 (0.7%); Muted 26 (1.0%).



Event Summary: Total 8079; Clear 8079 (100.0%); Impaired 0 (0.0%); Muted 0 (0.0%).

SUPPLEMENTAL LANDMARK 15-17 GRAPH

INDEX PAGE - APPENDIX A

NOTE: Appendix contents will be supplied on request

WG-K 6/1/95 (4)

DIGITAL AUDIO RADIO FIELD TEST PLAN; METHODS AND PROCEDURES

APPENDIX -3- rev. 5.0
May 30, 1995

The NRSC DAB Subcommittee - Field Test Task Group has adopted a statement of Objectives and Goals for field testing, a copy of which is attached to this plan as Appendix A. The Methods and Procedures presented here incorporate those basic objectives and goals and are presented below. Each of the outlined areas and items of testing must be considered and refined to yield a suitable test program that fits within the needs of the EIA/NRSC-DAR test program, its time and budget constraints. The following describes the major types of measurements that are anticipated, followed by an outline of the steps by which they would be conducted and the type of test and data extracted.

Field testing may be conducted on those DAR systems tested in the Laboratory and not withdrawn from field testing. The systems include seven (7) proponent systems and one special mode of one of the systems. The seven systems are: IBAC system AT&T; IBOC systems AT&T/AMATI, USADR-1, USADR-2, USADR-AM; Other band system EUREKA-147; Satellite system VOA-JPL. The special mode is the IBAC system of AT&T operating in IBRC (In Band Reserved Channel) mode, replacing the analog transmissions completely. Because of its replacement mode it will be tested for a limited time and only during experimental early morning hours. Each of the systems and modes of operation is described in detail in Appendix B attached to this document, a compilation of system descriptions supplied by the system proponent (where available). Attached as Appendix C are block diagrams of the terrestrial transmission systems.

The general areas and paths over which testing is planned are outlined below. The paths and the Qualitative Characteristics found along each path are described in Appendix D attached to this document.

(L) "Long" path testing will be conducted over a path many kilometers long and taking 30 or more minutes to drive. The path may be open or a closed loop, around an area where a continuous observation of reception is desired. The general path areas will be selected to represent the various propagation conditions in the test area. They will include a variety of terrain, vegetation, construction, etc. and generally must provide a choice of path routes. The areas and resulting paths may be classified as "City", "Suburban", "Rural", "Mountainous", Etc. The individual particular paths must be accessible and suitable for continuous testing and will be selected to expose the systems under test to typical environments and driving conditions in the area. The usable path (lane), speed, pauses and turns will all be as identical as possible for each system under test but will also be determined by the accessible path and traffic conditions at the time and therefore will contain considerable random variations.

For the IBOC hosted systems no special or particular audio test segment can be used on the analog channel. Therefore, when simultaneous audio comparison is desired, only the normal "programming of opportunity" transmitted on the host radio station at the time could be used on the digital channel. Other systems could use this same audio feed. For all systems, when testing only the digital channel, special programming of a "typical" program or "special test" audio segment could be used for testing without direct analog to digital comparison.

Testing will be conducted sequentially among the systems under test with the minimum practical time between systems so as to maintain nearly identical propagation conditions. In the event of rapidly changing conditions, testing may be delayed or repeated on following days to test under similar conditions or attempt to average the results. When all systems have been tested along one path, the next successive path will be tested until all systems have been tested along all paths.

The digital audio received during the Long path tests will be continuously monitored for audio reception "events" which will be marked in the computer log as they are noted by the test crew. The log will reveal where the events occurred and will be an aid in determining where additional testing should be conducted. Two observation decision points will be identified as events. The first is described as the transition between listenable and un-listenable audio and the second is the transition from unlistenable to no audio. Audio samples encompassing these decision points will be demonstrated to the test crew who will then identify the decision point events and use the demonstrations to train themselves in their recognition. This process is further described in following parts of the test plan.

(S) "Short" path tests will be conducted over a path up to several hundred meters long and requiring a 30 to 60 second test at the speed dictated by the "environment" in which it is driven. The environment typical speed may range from a slow 10 to 30 KPH for city center, to 100 KPH for highways. The corresponding path length could range from 100 meters to 1.5 kilometers. The path must be precisely repeatable (same traffic lane) and not subject to any interruptions during a test (no stop signs, heavy traffic, etc.) therefore the paths must be chosen accordingly. The start and stop points will be marked by suitable means; such as noting existing landmarks or using surveying tape or paint. Critical audio segments, selected from the laboratory testing candidate segments, will be recorded and monitored for audio events. The audio transmission must be closely coordinated with the start of a path. A uniform speed, yielding nearly the same location vs. time, should be maintained between runs. Recording a time code and distance event marks along with other data will make checking position with audio events possible. Maintaining the controllable parameters with as little variation as practical leaves only one main test variable, the propagation to the test location. Analysis will therefore report digital system performance verses propagation path.

(P) The "Point" location is really a very short path mobile run. Because of the position variability found in VHF signals, measurements or observations should not be made at stationary locations but must be made over some area (path distance) to arrive at an average value or indication of the signal and its reception. Most likely the short path would be a small circle measured at a very slow velocity of about 1 or 2 meters per second, for a 10 to 50 meter total distance. This measurement serves as a basis for estimating ambient Field Intensity and propagation character in an area, particularly the signal margin above system failure and the presence of multipath propagation. This information will be associated with "Short" and "Inside" measurements.

(I) The "Inside" building tests will be conducted at several locations inside representative building structures including residential, commercial, industrial,